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ABSTRACT OF

The Hunterian Lectures

ON

THE EVOLUTION AND ACTION OF CERTAIN MUSCULAR STRUCTURES OF THE HEART.

Delivered before the Royal College of Surgeons of England on Feb 22nd, 24th, and 26th, 1904,

BY ARTHUR KEITH, M.D. ABERD., F.R.C.S. ENG.,

HUNTERIAN PROFESSOR ROYAL COLLEGE OF SURGEONS OF ENGLAND; LECTURER ON ANATOMY, LONDON HOSPITAL MEDICAL COLLEGE.

LECTURE I.

Delivered on Feb 22nd.

MR. PRESIDENT AND GENTLEMEN,—It is with a feeling of keen disappointment that men who seek to extend our knowledge of the origin and development of the human heart lay down any of the standard treatises on the function and diseases of that organ. Their labour, apparently, as far as one may judge from the perusal of such works, lies outside the field of practical medicine and is useless to physician and physiologist alike. The purpose of these lectures is to show that, by studying the unique collection of vertebrate hearts in the museum of this College in the manner which Hunter intended them to be studied and by using them to interpret the developmental phases of the human heart, light can be thrown on certain obscure problems concerning the action of the heart in health and disease.

PULSATION IN THE VEINS.

In the later stages of heart disease, when the right side becomes engorged, well-marked pulsations may appear in the veins of the neck. Thanks to the careful observations of Dr. James Mackenzie,[1] we know that these pulsations or rises of pressure in the great veins occur at two points in the cardiac cycle: (1) during auricular systole and (2) towards the end of the ventricular systole. In early cases of back pressure both these pulsations are present; in the later stages the ventricular wave gradually merges with, and ultimately absorbs, the auricular wave. If Mackenzie is right in regarding these venous pulsations as directly due to the contraction of the auricular and ventricular chambers, then it is plain that the caval orifices of the auricle have been rendered incompetent when these waves appear. Whenever the great veins pass behind the clavicle above or Poupart's ligament below and come to lie within the respiratory area of negative pressure they lose their valves and there is thus no obstacle to prevent the appearance of a regurgitant wave from the auricle in either the jugular bulb above or termination of the femoral vein below. The problem as to the cause of these two venous waves, named by Mackenzie the "auricular" and "ventricular," is rendered more difficult by the fact that both of them, although much less marked in amplitude, occur in veins in health.[2] During auricular systole the auricular mouths of the venæ cavæ are closed; the venous blood is dammed back, giving rise to the normal auricular venous wave. In health there is no regurgitation during systole from the auricles,[3] but in disease there is apparently added to the normal back pressure in the veins an increase due to a regurgitation during auricular systole.

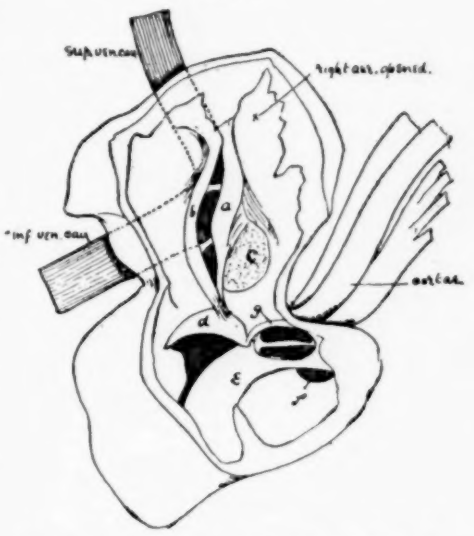
The point to be settled first is: How are the caval orifices closed during auricular systole? The current teaching is that they are closed by the contraction of muscular fibres which surround the terminations of the great veins. The largest vein of all, the inferior vena cava, has no annular muscular fibres surrounding its termination; those round the superior vena cava are weak and do not seem strong enough to act as a competent sphincter. The coronary sinus, on the other hand, is covered by circular and longitudinal layers of muscle and is provided with competent valves as well. Thus the explanation usually given of the manner in which the venous orifices are closed breaks down under anatomical examination and the true explanation is still to seek.

THE MANNER IN WHICH AURICULAR REGURGITATION IS PREVENTED IN LOWER VERTEBRATES.

When one sees the secure manner in which the venous valves prevent blood returning to the veins during auricular systole in the three lower classes of vertebrates, it becomes a matter of the highest probability that there is a corresponding functional mechanism in the two highest classes—birds and mammals. In fishes, amphibians, and reptiles all the veins of the body unite at their terminations in a common dilatation or reservoir—the sinus venosus. The margins of the fissure-like mouth by which the venous blood passes from the sinus to the auricle are guarded by two strong membranous valves, which are right and left in position, and unite at their upper and lower ends in drawn-out angles or fornices. During the auricular systole the valves are rendered taut and competent. The venous sinus and the venous valves appear in the human embryo as they do in that of every vertebrate, and are at first well-developed structures functionally active. During the third, fourth, and fifth months of embryonic life the valves and the auricular muscle which acts on them undergo a gradual transformation, until by a reduction of one part and an increased development of another there is evolved a mechanism which takes on the function of the valves. No organ in the whole body is so conservative in its tendencies as the heart; what improvement it has obtained in the course of its history it never loses; its progress is made not by the introduction of new structures but by modification of the old.

The structures in the right auricle which arise from the venous valves and the musculature of the valves and which we may expect to be concerned in the closure of the caval orifices are represented in Fig. 2. For comparison there are represented in Fig. 1 the venous valves in the right auricle of a child who lived for some weeks after birth; in their form and attachments they resemble exactly the venous valves of a reptile. The lower part of the right venous valve

FIG. 1.



Right auricle and ventricle of a child's heart laid open to show the retention of the venous valves. The heart shows the characters of a typical reptilian heart (from a specimen in the London Hospital Medical College Museum). *a*, Left venous valve. *b* Right venous valve. *c*, Septum ovale. *d*, Right auriculo-ventricular valve. *e*, Pulmono-aortic septum. *f*, Opening of pulmonary artery. *g*, Auriculo-aortic angle.

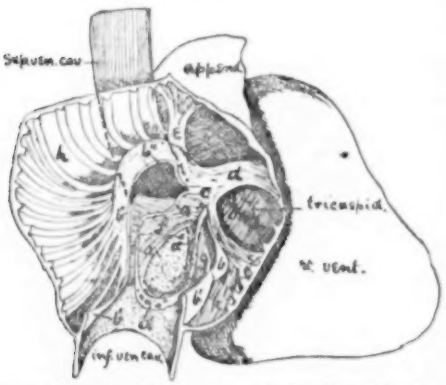
[1] James Mackenzie: The Study of the Pulse, 1902.

[2] R. Burton-Opitz: The Flow of Blood in the External Jugular Vein, American Journal of Physiology, vol. vii., p. 435, 1902.

[3] L. Fredericq and S. P. Nuel: Éléments du Physiologie Humaine, Gand, 1893.

forms the Thebesian and Eustachian valves (Fig. 2) which still help to guard the opening of the coronary sinus and inferior vena cava. The upper part of the right valve disappears but it is not an uncommon thing to see a trace of it

FIG. 2.



Right auricle of a child thrown open to show the position of remnants of the venous valves and of the muscular bands developed from their bases. *a, a*, Position of the left venous valve. *a'*, Remnant constantly present at the lower margin of the septum ovale. *b*, Thebesian valve. *b', b'*, Eustachian valve. *b'', b''*, On the right tænia terminalis, and showing other remnants of the right venous valve. *c*, Between the upper and lower fornices of the venous valves. *d*, Annular fibres of the auricular canal. *e*, Tensor of appendix. *f*, Upper band of auricular muscle which breaks across opening of sinus venosus. *g*, The lower band. *h*, Musculi pectinati. *k*, Sub-Eustachian sinus.

on the septal wall between the caval orifices and ending above by passing across the anterior margin of the superior caval orifice to end on the septum in front of that orifice (Fig. 2). The disappearance of the valve is due to an enormous development of the musculature of its base; it forms a great rounded fasciculus, the right tænia terminalis,[4] which commences in the inter auricular septum and passing across the anterior margin of the superior caval orifice turns down in the wall of the auricle to terminate by feeble fasciculi in the Eustachian valve and outer margin of the inferior caval orifice (Fig. 2). Below, where the right venous valve has preserved the primitive form, its musculature is nearly absent. From the right tænia terminalis rise the musculi pectinati. In auricular systole the tænia terminalis sinks like a guillotine blade within the auricle over the mouths of the venæ cavæ, thus assisting to close the orifices.

The only trace that remains of the left venous valve is a membranous reticulation seen on the inner or septal margin of the inferior caval orifice along the base of the fossa ovalis (Fig. 2). In fœtal and abnormal hearts the valve can be traced upwards till it unites with the right valve below the superior caval orifice and downwards on the septum till it joins the Thebesian part of the right valve (Fig. 2). Thus the upper and lower fornices of the venous valves come to lie on the septum of the adult auricle. The musculature of the left valve remains as a narrow flat bundle that is best seen beneath the remnant of the valve below the fossa ovalis. It can be traced above to the upper fornix and below to the lower (Fig. 2).

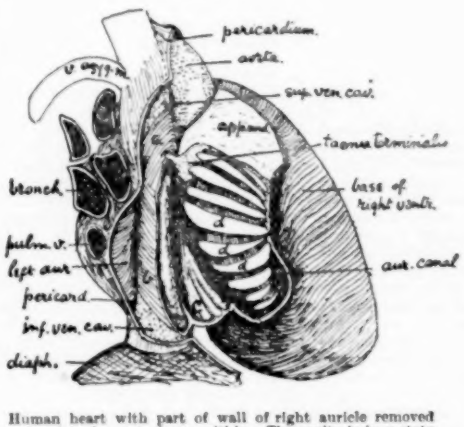
While the musculature of the right venous valve has undergone a new development both valve and musculature of the left side have atrophied. The atrophy is due to the appearance of two new bands of muscle, derived from the septal wall of the auricle. It is the development of these two bands that relieves the left valve of its function and causes its atrophy. They arise in this way. The wall of the sinus venosus becomes thrown into two folds; one of these projects within the right auricle (Figs. 1 and 2) between the orifices of the superior and inferior venæ cavæ; the other between the orifices of the inferior vena cava and coronary sinus. In these two inflections of the sinus wall muscular bands from the septum pass beneath the base of the left valve and gain an attachment to the right. In this manner the sinus venosus is absorbed in the right auricle and the original opening between the venous valves is divided into three parts—the upper for the superior cava, the lower for the coronary sinus, and the intermediate for the inferior vena cava. By the action of these structures derived from the venous valves and the two auricular bundles that have broken across the venous sinus the orifices of the veins are closed during the systole of the auricle. It is important to remember that the muscle of all these structures is derived from the musculature of the auricular canal (for the interauricular septum is derived from the canal), which we know, from the researches of Gaskell[5] on the heart of the tortoise, and MacWilliam[6] on that of the eel, is more easily stimulated to contraction than that of the proper auricle. The proper auricle is developed as a diverticulum of the canal.

THE MANNER IN WHICH THE VENOUS ORIFICES ARE CLOSED.

The movements of the living auricle are so quick that it is impossible to follow them with the eye. By using a modification of the method adopted by Hesse[7]—namely, by throwing injections of molten paraffin wax at the temperature of boiling water into the auricles of the dead heart their walls can be thrown into a condition of heat contraction, which, as far as the change of form is concerned, resembles approximately the natural contraction. The injection must be made while the heart is still within the unopened thorax and after the blood has been washed out from the auricles. When such an injection is made it will be found that the wax within the auricles is partially or sometimes completely separated from that within the great veins by the contraction of the structures which have been described as arising from the venous valves. There is the further advantage in this method of investigation that the action of the various parts of the auricular wall may be studied, for on the cast within the auricle are impressed the various muscular bands, and one can see at a glance what part each will play in propelling the load of the auricle.

The structures which close the orifice of the superior vena cava are shown in Figs. 2 and 3. Along the anterior margin

FIG. 3.



Human heart with part of wall of right auricle removed showing the cast of wax within. The cavity is in a state of partial contraction. *a*, Sphincter fibres of superior vena cava. *b*, Septal fibres which end on right tænia terminalis. *c*, Sub-Eustachian sinus in front of Eustachian valve. *d d d*, Ridges between impressions for musculi pectinati. *e*, Groove of tænia terminalis.

of the orifice, which is oval in shape, passes the right tænia terminalis; along its posterior or septal margin runs part of the muscular band which broke across the sinus venosus between the superior and inferior venæ cavæ. Between

[4] For a full description of the anatomy of the auricles see paper in Proceedings of the Anatomical Society of Great Britain and Ireland, November, 1902.

[5] W. H. Gaskell: Text-book of Physiology, edited by E. A. Schäfer, 1900, vol. ii.

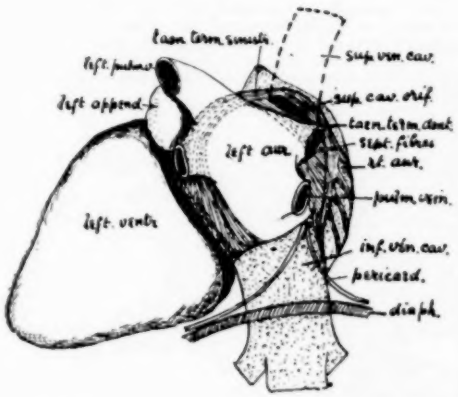
[6] J. A. MacWilliam: Structure and Rhythm of the Heart in Fishes, Journal of Physiology, 1885, vol. vi., p. 192.

[7] F. Hesse: Zur Mechanik der Herzbewegung, Archiv für Anatomie, 1880, p. 328.

these strong muscular bands the orifice of the superior vena cava is reduced to a fissure in auricular systole. The muscular fibres which surround the terminal part of the superior vena cava also help to secure the orifice (Fig. 3). These fibres are derived from the musculature of the sinus venosus, the most excitable of the auricular musculature. In front of the termination of the superior vena cava but separated from it by the tænia rises up a thin-walled diverticulum of the auricle which acts towards the tænia the part which a sinus of Valsalva serves to a semilunar valve.

At the inner or septal angle of the superior vena cava (see Fig. 4) the septal fibres behind the orifice of that vessel and

FIG. 4.



View of the human heart from behind, showing diagrammatically the relationships of the tænia terminalis of the right and left auricles.

those of the right tænia terminalis become continuous with a band which crosses the roof of the left auricle. As it is a constant feature of the hearts of birds and mammals, and is similar in origin and function to the tænia of the right side, it may be named the left tænia terminalis. The two tæniæ form together a horse-shoe-shaped band which encircles and helps to close the venous orifices of both auricles (Fig. 4). They terminate below on and near the right and left margins of the inferior vena cava. The terminal part of this vessel, which is fixed in the diaphragm and pericardium, forms the fulcrum on which and from which the tæniæ act in auricular systole.

The inferior caval orifice, which is double the size of the superior, is closed by the anterior margin, which carries the Eustachian valve, being drawn inwards until it comes in contact with the inner or septal margin. On the septal margin is situated the septum ovale, and since the pressure in the left auricle is held to be the greater in systole it is possible that the septum may bulge to meet the incoming lateral margin. That margin is drawn inwards by the muscular bands which broke across the common orifice of the sinus venosus. These bands surround the fossa ovalis and form what is called at present the annulus ovalis or limbus of Vieussens, but when that structure is examined it will be seen to be composed of an upper and lower part which are only partly fused together at their origin in the interauricular septum (Fig. 2). The lower band, or inferior limbic band, which broke across the venous orifice between the inferior caval and coronary orifices, ends in the Eustachian valve and in the margin of the inferior vena cava. The upper limbic band, which forms only part of the auricular fibres which crossed the sinus venosus between the caval orifices, also ends in the lateral margin of the inferior vena cava. By the contraction of these bands, aided also by the terminal fibres of the right tænia terminalis, the lateral and septal margins of the inferior caval orifice are brought in apposition, so that the Eustachian valve is brought against the septum ovale and renders the orifice competent. But while the closure of the superior caval orifice is wholly due to the muscular bands which surround it that of the inferior is accomplished partly by mechanical means. The free edge of the Eustachian valve may be reticulated or absent but its basal part is constantly present. The auricular wall at the base of the Eustachian valve forms a thin-walled projecting sinus in the hearts of all mammals (Fig. 3, *c*) which by its distension during auricular systole helps to press inwards the Eustachian valve and lateral margin of the inferior caval orifice against the septal margin. In the later stages of cases of auricular hypertrophy the wall of the sinus becomes thickened and its extent less defined; in distension of the auricle, with atrophy of its wall, the sinus becomes greatly distended and may reach a large size. The orifice of the coronary sinus is closed by the Thebesian valve and the annular fibres of the auricular canal, amongst which the orifice is imbedded. In auricular systole the base of the right ventricle is drawn towards the opening of the inferior cava, this movement greatly aiding the closure of the orifice by the structures described.

THE REASON FOR THE DISAPPEARANCE OF THE VALVES.

The venous valves are reduced and the muscular bundles described above appear in those animals in which the heart is completely separated into right and left halves. Complete division is only found in the hearts of birds and mammals. A rigid, mechanically accurate mechanism is replaced by one which will allow regurgitation during engorgement of the auricle. If the auricles of an amphibian or reptile become overfilled by active exercise, the right heart quickly relieves itself into the left side through the interventricular foramen, but when that communication is closed then of necessity a safety mechanism must be introduced at the venous orifices of the right auricle so that the auricle may not overload the ventricle. The function of the auricle appears to be not only to fill the ventricle but to regulate the load of the ventricle.

THE AURICULAR VALVULAR MECHANISM IN CASES OF VENOUS PULSATION.

Dr. Mackenzie was good enough to submit to me for examination four hearts from cases in which he had taken records of the pulse in the veins for some years before death. Besides these I had at my command a series of specimens showing greatly distended auricles in the museum of the London Hospital Medical College, but of these I had no history as to the venous pulse. Dr. Mackenzie's cases showed mitral and tricuspid stenosis; in all the auricles were greatly dilated. In one there was great hypertrophy of the musculature of the auricles, in another there was extreme atrophy, and the remaining two specimens showed intermediate conditions. In all, too, the appendix of the auricle was filled by an ante-mortem clot. The tænia terminalis was in all greatly elongated, but it was hypertrophied in the hypertrophied auricle and small in the one which showed marked atrophy. The parts which were markedly changed were the bands which I have described as crossing the original mouth of the venous sinus; the septal fibres which help to close the superior caval orifice and the limbic bands which close the inferior caval orifice were stretched to nearly twice their normal length. The Eustachian valve and its sinus were also distorted or absent. The muscular fibres round the terminal part of the superior vena cava were partially atrophied in all these hearts. The caval orifices, especially that of the superior vena cava, were also dilated.

A marked feature of all these cases in which the auricles are greatly distended is the great extension of the interauricular septum. Normally in the diastolic condition it measures about an inch when the distance is reckoned from a point taken between the caval orifices to one on the margin of the septum which lies against the aorta, but in mitral disease this diameter frequently measures two and a half or three inches. With this extension of the septum the foramen ovale may become widely open. That need not mean that the foramen ovale has been opened afresh, for in the valuable statistics given by Professor E. Fawcett and Dr. J. V. Blachford[8] this foramen was found patent in 27 per cent. of subjects which were over 20 years of age.

RELATIVE COMPETENCY OF THE VARIOUS ORIFICES.

From an examination of the anatomy of the parts one would say without hesitation that the superior caval orifice is by far the most strongly guarded and least likely to allow

[8] E. Fawcett and J. V. Blachford: The Frequency of an Opening between the Right and Left Auricles at the Seat of the Fœtal Foramen Ovale, Journal of Anatomy and Physiology, vol. xxxv., p. 67.

regurgitation in auricular systole. The inferior caval orifice, unprotected by circular fibres, and partly mechanical in its manner of closure, seems, on the other hand, one that would be easily deranged and rendered incompetent by distension of the auricle. The coronary orifice stands, in the strength of its guard, intermediate to the other two. The clinical experience of Dr. Mackenzie points in an exactly opposite direction. It is to be observed in the first place that he uses the pulsation of the liver as an index of the extent to which regurgitation takes place through the inferior caval orifice in auricular systole; an auricular pulsation he found to occur in the liver only when there was tricuspid stenosis with hypertrophy of the right auricle, whereas an auricular systolic wave occurred in the jugular vein in all heart cases where there was over-distension of the right side. That observation leads one to conclude that a venous pulsation in the liver is produced under a considerable positive force, such as can be produced by a hypertrophied auricle, the force of which is diverted by the narrowed tricuspid orifice or by the ventricle acting through an incompetent tricuspid orifice. An exaggeration of the normal auricular wave, seen in the jugular veins in cases of back pressure, need not mean an actual regurgitation from the auricles, for in these cases the great veins are so distended that the mere occlusion of their orifices during auricular systole would be sufficient to produce the auricular wave seen in the earlier stages of venous back pressure. On anatomical grounds one would expect a positive auricular wave, due to regurgitation of the auricular blood, to appear in the tributaries of the inferior before it can be felt in those of the superior vena cava.

THE EFFECTS OF ADHERENT PERICARDITIS.

Clinicians readily admit that there is still much that is obscure in the sequelæ of pericarditis. When adhesions form after pericarditis they begin between the auricles and the pericardium where the great veins pierce to enter the heart and where the structures which close the venous orifices are situated. Mere adhesion of the auricles to the pericardium, while it may lead to some hypertrophy of the muscular wall, will not markedly affect the normal action of the auricles so long as the outer surface of the pericardium remains free. But when the pericardium becomes adherent to surrounding structures the muscular bands which surround the venous orifices are greatly handicapped by the adhesions and regurgitation takes place. Dr. J. H. Sequeira[9] found that liver tenderness was one of the most common sequelæ of adhesive pericarditis; the tenderness may be due purely to the venous back pressure, but that back pressure will be increased if the auricle adds part of its load to the already distended veins of the abdomen. In cases of adhesive pericarditis with great distension and hypertrophy of the auricles, the caval opening in the diaphragm will be found greatly reduced in size not from a cicatricial contraction but evidently owing to an attempt to ameliorate the conditions resulting from an incompetency of the auricular orifice of the inferior vena cava.

FIXATION OF THE HEART IN CASES OF PERICARDITIS.

When the pericardium becomes fixed by adhesions to the lungs and chest wall a number of obscure symptoms follow owing to the arrest of the normal respiratory movements of the heart. The type of respiration may change; the patient, instead of gaining his inspiratory space by a forward heave of his abdominal wall, due to the descent of the diaphragm, inspires by expanding the walls of his chest and body in a lateral direction. Further, in some of these cases, especially if the inflammatory process and adhesions have been confined to the structures of the posterior mediastinum between the base of the heart and the spinal column a peculiar type of heart action—pulsus paradoxus—may appear in which the pulse beat is stronger or only perceptible during expiration. These conditions find their explanation in the disturbed respiratory movements of the heart.[10] John Hunter[11] laid it down as a morphological law that the heart is attached to the organs of respiration and follows the movements of these organs. When the lungs supplant the gills the heart migrates from the neck to the thorax. In mammals the heart is firmly fixed to the roots of the lungs by fibrous prolongations of the pericardium carried into them on the pulmonary veins and arteries. It is in the mesentery which fixes the base of the heart of the embryo to the dorsal wall of the body cavity that the lungs are developed and from which they sprout out as buds. The dorsal mesentery forms that part of the pericardium which binds the pulmonary roots and the base of the heart together. A true conception of the respiratory movements of the heart has been retarded by the traditional statement that the roots of the lungs are fixed parts. It is impossible that there could be a movement of the base of the heart without a corresponding movement of the roots of the lungs, so closely are they bound. It is admitted on all hands since the introduction of the x rays that there is a very considerable movement of the base of the heart during inspiration in a downward and forward direction. In that movement it merely follows the roots of the lungs. The lung cannot expand either in a backward, inward, or upward direction, because in these directions the chest wall cannot be enlarged. It will be found that the apex of the lung is the fixed point from which the inspiratory movement of the lung takes place and from it the expansion of the lung proceeds in a forward, downward, and outward direction. In this general movement of the lung the root participates. The extent of the movement of the root is indicated in life by the shadow of the base of the heart. The lungs in all their movements carry their pump with them. In no mammal is the inspiratory movement of the pulmonary roots so great as in man, because in him the heart and the roots of the lungs are so firmly bound to the diaphragm (see Fig. 5).

FIG. 5.

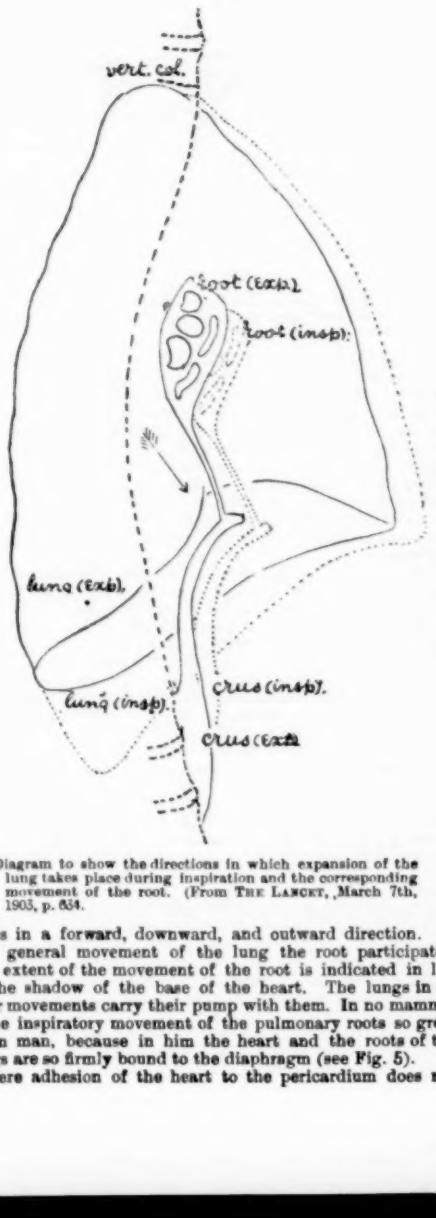


Diagram to show the directions in which expansion of the lung takes place during inspiration and the corresponding movement of the root. (From THE LANCET, March 7th, 1903, p. 634.

Mere adhesion of the heart to the pericardium does not

[9] J. H. Sequeira: Remote Prognosis of Pericarditis, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxii., 1899.

[10] A. Keith: The Anatomy and Nature of Glénard's Disease, THE LANCET, March 7th, 1903 p. 631.

[11] John Hunter, Palmer's edition, vol. iii.

interfere with the cardiac respiratory movements but when adhesions fix the pericardium to the lungs at each side and to the chest wall in front and behind these movements become impossible and cease to take place. The patient then develops a type of respiration which can be performed without moving the roots of the lungs. That is accomplished by expanding his thoracic wall in a lateral direction. In that movement the central part of the diaphragm and its crura take no part. If, however, only the base of the heart is attached to the posterior thoracic wall by the adhesions which follow posterior mediastinitis, the lungs being left unaffected and free, then, when a breath is taken, a strain is thrown on the structures in the roots because the heart cannot follow the movement of the lung. It seems to me that such a strain would be sufficient to retard or to stop the flow of blood in the pulmonary veins during inspiration but as yet no opportunity has occurred to me of verifying this theory.

ABSTRACT OF

The Hunterian Lectures

ON

THE AFTER-EFFECTS OF HEAD INJURIES.

Delivered at the Royal College of Surgeons of England on Feb. 15th, 17th, and 19th, 1904,

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LECTURE II.[1]

Delivered on Feb. 17th.

MR. PRESIDENT AND GENTLEMEN,—At the conclusion of my last lecture I was dealing with the mental disturbances which follow injuries to the head. I shall next speak of the impairment of certain special intellectual faculties.

Motor aphasia is a well-known consequence of injuries to Broca's speech centre. A typical example was seen in a man, aged 52 years, nine months after a blow with a pitchfork exactly over Broca's area. The aphasia had improved somewhat since the accident and was associated with severe localised headache and giddiness. Operation was recommended but refused. Aphasia was present in three other patients, being associated with hemiplegia in two; all these cases are included in the third series. I have met with no example of the interesting condition known as "*recurring utterances*" continuing for a long period after the head injury, although I have several times seen it during the gradual return to consciousness after cerebral contusions and lacerations. The expression "recurring utterances" is applied to verbal repetitions made by the patient at every attempt to speak. One word or one phrase may be constantly repeated perhaps for months, years, or even a lifetime after an injury which has involved the centres of speech. Sometimes it is the last word spoken before the accident, sometimes it is part of a word, sometimes a meaningless expression. In one reported case the last words used by the patient before loss of consciousness had been "Mrs. Walker" and later the "recurring utterances" occurred in the constant repetition of the word "Mrs."

Traumatic amnesia of some kind is very common, varies greatly in degree, and may be temporary or permanent. It is important to distinguish between loss of memory of the details of the accident, loss of memory of events preceding the accident, and the later impairment of memory. The loss of memory of the details of the accident and the events immediately following it is well known. This was found in many of the patients and was as a rule permanent. Sometimes the loss may be gradually repaired, as in a case recorded by Kompken, in which a man after a head injury had entirely forgotten the events of the three days following it and each day was successively remembered until at last the accident itself was recalled. In a certain number of cases after recovery from the early symptoms the patient finds to his surprise that he has forgotten entirely not only the accident and the succeeding circumstances but a certain length of time, varying from a few hours to a few days or even longer, before the accident occurred. A few cases are recorded in which the whole of the patient's previous life became a complete blank to him. Abel[2] reported a case of puncture of the frontal part of the brain in which the patient's life for 20 years before the accident was completely obliterated from his memory. He failed to recognise his wife and old friends and asserted that he had never worked on the railway but was a farm labourer. He had, however, been a railway labourer for 20 years and before that time had worked on a farm. A year later there was some partial return of memory.

Distinct from these cases we have the later amnesia, varying from slight difficulty in remembering names and numbers to extreme impairment of memory. This condition was found in 36 cases in series 1 and in 21 in series 2, but probably occurred in many others. Generally speaking, where symptoms following head injuries were marked there was some impairment of memory. There are two distinct varieties of this condition. In the majority of cases it is an outcome of the general nervous instability: the patient is unable to fix his attention and to concentrate his thoughts and the result is impairment of memory. In some cases there has been a definite lesion of one or more of the centres for special memories, such lesion being usually cortical contusion or laceration.

Agraphia is sometimes a consequence of cerebral injuries which persists for several months or even indefinitely. It occurred in an officer who had been shot through the head in South Africa, the bullet entering in the left frontal region and leaving the skull in the left occipital region. 15 months later he appeared comparatively well mentally, but as soon as he attempted to write a letter he found it quite impossible to put anything intelligible on paper, not even being able to write down "Dear Sir" or his own name. In slighter cases of agraphia the patient can write but the spelling is frequently incorrect and great difficulty is experienced with words of more than two syllables. Sometimes the patient realises his mistakes; in other cases he is quite satisfied with what he has written until his attention is drawn to the wrong words and even then may be unable to grasp the nature of the mistake.

Loss or impairment of the arithmetical faculty is a curious and not uncommon feature; I have met with several instances. The business man may be quite unable to add up the simplest column of figures, the attempt to do so being a complete failure and producing headache. I tried this test with several patients and the frequency with which the simplest arithmetic baffled them was very interesting. This faculty is one most commonly impaired after head injuries and often the last to be recovered completely. For business men, then, I should recommend a much longer period of mental rest than for men engaged in other pursuits, for such a man takes much longer before he is fit to return to his business than the man whose occupation is purely manual.

The *musical faculty* is sometimes lost when all others are retained. I tested this faculty in several cases but found no instance in which it was impaired. There are a few remarkable instances on record in which patients have had periods in which they cannot speak words but can only sing them.

Traumatic somnambulism sometimes occurs, especially in children. The patient performs certain acts quite unconsciously and afterwards has no memory of what he has done. I met with an example of this condition last year. The patient, a man, aged 26 years, was at a convalescent home five weeks after concussion; he was found walking about unconsciously at night and when taken back to bed had no memory of his action beyond stating that he could not find his way about at night. He was quite well during the day. It was thought that this was due to his having played cricket in the sun, but the sun was not strong then, and I am inclined to think that the excitement of cricket was the more important factor. There had been no somnambulism before the accident.

Lesions of the cranial nerves will be mentioned next. *Loss of smell* was found in four cases at periods of one and a half, six, six and a half, and ten years respectively after the accident; in three cases the base of the skull had been fractured. One patient who had sustained

[1] Lecture I. was published in THE LANCET of Feb. 20th, 1904, p. 485.

[2] Brit. Med. Jour., Feb. 16th, 1895.

a severe fracture of the anterior fossa stated that the loss of smell was not noticed until one and a half years after the accident. He said, as is often said by such patients, that he had also lost the sense of taste. He described it thus: "I can distinguish decided tastes, such as sugar or salt, but not the finer ones, such as mutton, beef, or game of any sort." Subjective sensations of this special sense are usually the result of hæmorrhage in the anterior fossa or direct damage to the olfactory bulb and its branches, in the common accidents in which the frontal lobes are injured by *contrecoup*.

There are two conditions connected with the *eyes* which commonly follow head injuries; the one is inequality of the pupils and the other is accommodative asthenopia. *Inequality of the pupils* is frequently seen and may persist for a long period after the accident. In my experience it is only found in cases in which there has been reason to suspect some macroscopic lesion of the brain and the larger pupil appears to be on the injured side of the head. *Accommodative asthenopia* frequently accompanies chronic headache, vertigo, depression, and other manifestations of nervous disturbance. The effort of ciliary accommodation is soon followed by fatigue. The patient usually complains of weakness or mistiness of vision; on attempting to read or to look at any objects closely headache is produced, the letters or objects appear to run one into the other, and sight seems to fail him. The ophthalmoscopic examination fails to detect any change in the fundi and usually no error of refraction is discoverable. If the patient happens to be hypermetropic or astigmatic the symptoms are more marked. In two cases complete blindness in one eye led to the discovery of optic atrophy at intervals of eight and 14 months after the accident; in both there had been the signs of fracture of the anterior fossa of the base. *Nystagmus* was met with in two instances. It was seen in one patient 19 months after a depressed fracture of the left parietal bone and in another three years after a compound depressed fracture of the left frontal region treated by trephining. In the latter case there was paresis of the right arm. In each case it was horizontal and unaccompanied by other ocular changes. Its significance is unknown.

Facial paralysis was found present in one case four years and in three cases about one year after fracture of the base. On the other hand, in nine cases in which this symptom had occurred after the accident it had disappeared at the time of the investigation.

Deafness was noticed in 12 cases in the first series and in three in the second series. It always occurred on the injured side of the head and in two cases was bilateral. It is probable that deafness is more often due to the injury having involved the middle or internal ear rather than the auditory nerve itself. In seven cases out of the 300 "post traumatic" otitis media occurred. Each case was carefully examined and there seemed no doubt that the otitis was directly referable to the injury. Three doubtful cases were excluded. In five of the seven cases there had been evidence of a fracture of the middle fossa. Three of the patients were children. Tinnitus was complained of in some cases and was associated usually with giddiness, rarely with deafness.

The condition of the superficial and deep reflexes is inconstant. The knee-jerks are most commonly exaggerated and this exaggeration usually lasts until complete recovery has occurred. In 40 cases in which symptoms were complained of the knee-jerks were exaggerated in 21, were normal in 10, and were diminished in eight.

The pulse after head injuries sometimes remains permanently slow with a tendency to intermission. In these cases complete recovery is rarely present and there is often a tendency to mental inertia.

There are numerous other conditions which may follow injuries to the head, to some of which I will now refer. It has long been known that these injuries may be followed by *glycosuria*: this may be temporary, appearing within a few hours of the accident and usually lasting for a few days only; or permanent, appearing after an interval of a few weeks or months. The former condition is common, the latter is rare. I met with no instance of traumatic glycosuria in series 1 and 2. In the third series is the case of a young officer who was under the care of Mr. G. R. Turner. He had been brought home from Egypt having sustained a severe fracture of the base followed by prolonged unconsciousness. Glycosuria was discovered six weeks after the accident and persisted; the patient's condition became extremely serious 12 months later. The urine contained about 8 per cent. of sugar and coma developed; for three days he was completely unconscious. Finally, however, he completely recovered, the urine becoming free from sugar 18 months after the accident. Only very occasionally does the glycosuria appearing after the accident persist for a long period; as a general rule, the later sugar appears in the urine the more pronounced and the more likely to persist is the condition. The precise explanation of the traumatic glycosuria is at present impossible. It has long been known that lesions of certain areas in the floor of the fourth ventricle produce glycosuria, but it is equally certain that lesions of many other parts of the nervous system may produce a similar result. This fact has been indisputably proved by experimental observations in animals. The clinical aspect of the question gives us but little help and although it appears that glycosuria most often follows fractures of the base and injuries to the back of the head the post-mortem observations in fatal cases have failed to reveal any constant lesions. We are therefore driven to the conclusion that the symptom possesses no localising value.

Traumatic hemiplegia may be primary, dating from the time of the accident, or secondary, appearing later after a variable interval. In the latter case it is due to cerebral sclerosis or softening involving the motor areas of the cortex. I have recently seen an interesting example of this late hemiplegia. The case was that of a man, aged 60 years, who sustained a compound depressed fracture of the vertex in the year 1861, a brick having fallen from a height on to the top of his head. He was operated upon and erysipelas followed. Later several pieces of necrosed bone came from the wound. His left leg was paralysed at the time of the accident but had recovered almost completely a few weeks after. In 1876 he noticed that the leg was beginning to become weak and to drag in walking. When seen last year there was a large depression over the upper part of the right parietal bone with a firmly adherent scar. The left leg was almost completely paralysed and the muscles were atrophied. There was also moderate paresis of the left arm. There appeared to be some blunting of the intellectual faculties but no other nervous effects. An instructive case of traumatic hemiplegia was admitted into St. George's Hospital under the care of Sir W. H. Bennett last year. The man had been struck on the head by a portion of a shell in South Africa 27 months previously. He was unconscious for nine days and left hemiplegia resulted; no operation was performed. The paralysis persisted and there had been severe headache and giddiness with impairment of memory and hearing. On admission a tender adherent scar was found over the right upper Rolandic area; the left leg was completely paralysed and the left arm partially. On operation the following lesions were found: thickening and adhesion of the pericranium, great thickening of the bone with an old fracture of its inner table, firm adhesion of the dura mater, and a blood cyst between the dura mater and the cerebral cortex. A large area of the bone was removed and the cyst was partially excised. Considerable improvement has since taken place in the movements of the arm but the condition of the leg is unaltered.

The pathology of certain of the conditions which I have described is obvious. The structural lesions connected with hemiplegia, motor aphasia, and disturbances of the cranial nerves, for instance, are well known and do not call for comment. I have already discussed the causation of the localised forms of cephalalgia. On the other hand, the pathology of many of the other symptoms which I have discussed is obscure and demands further research. I refer especially to generalised cephalalgia, vertigo, vomiting, and the various minor mental disturbances which owe their importance to their frequency. Some of these effects may be due to structural lesions, others are supposed to be the result of functional changes. In using the word functional I mean to say that we fail to find any anatomical or structural change to account for the symptoms and it is interesting to note that with the advance of knowledge many diseases formerly described as functional are now known to be structural. I admit that certain of the symptoms which follow head injuries may be due to functional disturbances but I believe that in the larger number of cases definite organic changes exist which are either direct or indirect causes of these symptoms.

It is not generally recognised that in the great majority of head injuries accompanied by loss of consciousness definite

organic lesions occur. Pure concussion, I believe, is extremely rare. It is argued that we have no evidence of the presence of organic lesions in cases of mild concussion. But there is a certain group of cases which gives us very definite evidence. I refer to those accidents in which the patient dies from thoracic or abdominal injury and in which there has also been some slight cerebral injury producing a short loss of consciousness. I collected ten cases of this nature, taking those in which there was a clear history of loss of consciousness for less than five minutes. In eight of these the necropsies revealed some definite intracranial lesion; in four there was cortical contusion, in one there was cortical laceration, and in all of the eight cases there was some degree of intrameningeal hæmorrhage. Further, the post-mortem examinations in cases where death follows at some more or less remote period after the receipt of the head injuries show that all but the slightest of the contusions and lacerations of the brain are followed by permanent changes. The most conspicuous of these changes is adhesion of the damaged part to the bone, an adhesion which is frequently so intimate that the brain tears away on attempting to separate it from the bone. In most cases we also find thickening of the meninges and discolouration of the cortex from old extravasated blood. The fact that mental disturbances following injuries to the head may disappear in time is no proof that they are not due to structural changes. Motor aphasia may be cured by the corresponding centre on the opposite side of the brain taking up the function of speech, and it is highly probable that when the centres of any of the intellectual faculties have been injured the function may be restored by being represented in other parts to the brain.

The diagnosis will sometimes present difficulties and one cannot always be certain that the symptoms attributed to the head injury are really due to that injury. After accidents of this nature the patient is on the watch for after-effects and may now notice some condition previously overlooked. An excellent example of this is found in ocular defects and in several cases I have found that defective vision complained of has been due to refractive errors which must have existed for some long time previously. Further, previously existing pathological conditions may be intensified by an injury to the head. In order that the features of the case may be thoroughly grasped it is necessary to examine the patient on three or four occasions at least and when possible to see the relatives, friends, and employers. In this way we shall be able to estimate correctly the significance and importance of the various symptoms and signs present.

The elements of malingering and exaggeration must always be remembered. It may be extremely difficult to determine whether the patient is honestly suffering from the symptoms of which he complains. Yet the malingerer will often reveal himself by the exaggeration of certain symptoms or by telling us of troubles which we know do not follow head injuries. I have noticed that such persons almost invariably complain of pain and more especially of tenderness in any scar that may be present. The facial aspect will tell much to the experienced eye. Cephalalgia and insomnia, for instance, are conditions which will inevitably impress themselves on the patient's expression. The red-faced, cheerful-looking individual who tells one that he has a continued headache and has slept but little since his accident may confidently be described as a perverter of the truth.

The utmost care must be taken to exclude hysteria, simple neurasthenia, and constitutional conditions such as syphilis and gout. Local causes for the head symptoms must be carefully looked for; the mouth, nose, ears, and eyes should always be examined.

Head injuries of one kind or other are common in children and there is ever a tendency on the part of the parents to attribute to these injuries any mental or other condition which may arise months or even years after. I have recently seen two children who were brought to me as suffering from the after-effects of head injuries. A careful examination, however, convinced me that all their symptoms resulted from nasal obstruction and this opinion was confirmed by the improvement which followed the removal of post-nasal growths. It has been suggested that when once a patient has apparently made a complete recovery from a head injury he will remain free from any further effects and that if head symptoms develop at some later date they are due to some other cause. My experience is that this is correct in the great majority of cases but that exceptions may undoubtedly occur. I have met with two instances in which chronic cephalalgia has developed as the result of osteo-sclerosis at the site of the injury after a prolonged interval in which the patients had been free from symptoms of any kind. Another striking example is afforded by a case to which I shall refer in my next lecture, in which a cerebral abscess following a depressed fracture remained completely latent for a period of ten years. As a general rule, however, I believe that when a patient has been completely free from symptoms for a period of six months any symptoms arising later will be due to some other cause. A head injury, of course, may increase a predisposition already existing and in particular the resulting susceptibility to the effects of alcohol may render the patient more liable to mental disturbances.

The prognosis in these cases must always be most guarded and should never be given until every detail has been carefully considered and until the patient has been seen on several occasions. At least a year is required for complete recovery in most cases of severe head injury and a prognosis given before that period is very likely to prove erroneous. The various etiological factors to which I have drawn attention will help us in determining the prospects of cure. It is clear that our efforts are more likely to meet with success in the cases in which the previous treatment has been imperfect than in cases which have failed to respond to thorough treatment. The means available for treatment must be reckoned with. The process of cure may involve much time and expense which many patients are unable to afford. When a patient comes for treatment for the after-effects of a head injury it is advisable at once to inquire whether he is bringing an action for damages or not, for the prognosis varies greatly with this factor. When the patient has been placed under treatment we are soon enabled to judge the prospects of ultimate recovery. In many cases the state of the temper is a good guide to the rate of progress and it is a particularly hopeful sign if the patient is conscious of his irritability and is anxious to overcome it. The return of natural sleep is another encouraging sign.

TREATMENT.

I will now proceed to consider the *general treatment* of these cases. In few other conditions are such careful consideration and such constant supervision required, and upon the treatment adopted depend the ultimate recovery and the future happiness of the patient. I wish to point out most emphatically that the majority of these cases are curable. But their cure requires the greatest care; it requires discrimination and it requires time. It cannot be brought about by a single examination and a hastily written prescription. There is no routine treatment; a careful study must be made of each case; the mental condition of each individual must be carefully watched; and the management of the case will vary considerably according to the varying nature of the symptoms with which we are dealing. Too often these patients are put on mercury or sent on a sea voyage, with a vague hope that time will see an end to their symptoms, and the usual result is that symptoms persist; valuable time is thus wasted, for the longer the symptoms have persisted the more difficult is their cure. In the well-to-do and in those who can afford to undergo the correct treatment the prospects of complete recovery are good; in the out-patient department of our general hospitals when the patients cannot or will not submit to the necessary treatment the results are very unsatisfactory. In a majority of the cases the question of operation does not arise, but whether operation is performed or not the general principles of treatment will be the same.

There is no part of the treatment which is more essential to success than the securing of mental and physical rest. It is impossible to emphasise too strongly the absolute necessity of prolonged mental rest. It has already been pointed out that where the period of rest after head injuries is short incomplete recovery almost invariably results, and it is as necessary in the cases with which we are now dealing as during the period immediately following the head injury. It is important at the outset to impress upon the patient the need of time and patience for successful treatment. He will often not realise the gravity of his troubles and the possibility of permanent nervous disturbance. In the medical profession, too, it is not sufficiently recognised that the period of treatment must be measured by months rather than by weeks. The following are the general measures which I

should recommend for the more serious cases in which chronic headache, depression, and irritability are marked features. To insure complete rest for the nervous system it is necessary that the patient should be removed from all sources of worry and excitement. The word "vegetation" describes most expressively the mental condition under which we desire to place him. Sometimes this can be managed at his home; but at home it may be impossible to free his mind of business troubles and much harm may be done by injudicious relatives or friends. We must be guided by circumstances. If the symptoms are severe and if the patient is well-to-do he should be treated in a private nursing home, and it will be thus possible thoroughly to control the management of the case. In other cases our object may be best effected by sending the patient to some quiet country village or farmhouse; let him vegetate here for some weeks or months, doing nothing which requires the slightest mental exertion, living in the fresh air as much as possible. He must not, however, be isolated, for isolation will do more harm than good. Let him be put in charge of a medical man or of friends who will take care to see that the details of the treatment are conscientiously carried out. For the more serious cases life at the seaside can rarely be recommended, for it is difficult to obtain the requisite amount of quietude. In no circumstances should a patient be sent to travel or to go for a sea voyage, if for no other reason than that he will be no longer under the supervision of the surgeon. For cases in which the after-effects are slight a stay at the seaside will be indicated. As improvement advances an increasing amount of exercise may be allowed; rowing is one of the best forms of exercise, as it involves but little exertion. Sea-bathing must certainly be prohibited. Certain other forms of exercise often indulged in by these patients must also be mentioned to be condemned: these are bicycling, motoring, and playing cricket or tennis in the sun. The main principle is that the patient must be strictly kept from any mental or much physical exertion; he must never be allowed to get tired. With mental quietude should be combined high feeding and general massage. Feeding must be pushed to apparent excess; food must be given in large quantity and frequently, and this will do much to favour the recovery of a healthy nervous tone. The occurrence of attacks of vomiting is no contra-indication to high feeding, for, as I have said, the vomiting is cerebral and not gastric in origin. Alcohol in any form must be strictly prohibited. Massage will assist in restoring the reduced nutrition and the increasing weight of the patient will be proof of its value.

The *drugs* which have been used in these cases are innumerable. I have never seen any good follow the use of bromides; the patient is already depressed and in low spirits and anybody who has ever taken bromides will appreciate their depressing effect, which is the last thing that these patients desire. In fact, the use of bromides will almost invariably aggravate the very symptoms which we wish to relieve. The epileptic undoubtedly improves under their use. In many mental and nervous diseases bromides are invaluable. For the sequelæ of head injuries their use is illogical and attended with harm. Iodides, again, rarely do good and are depressing but not so depressing as bromides. Strychnine should be avoided. Mercury in my experience is the only drug which gives these patients any lasting relief and even it will sometimes fail. Its mode of action is quite unknown; its use is entirely empirical. I have seen it do good again and again and therefore recommend it. I have usually prescribed it in the form of grey powder in combination with Dover's powder; one grain of each may be given three times daily and the dose then gradually increased. There is one point which must always be attended to whilst this drug is being used: the patient's weight must be taken regularly each week. In the majority of the cases we are discussing it will be found that the general nutrition is much impaired and it will be found that weight will steadily increase as improvement in the symptoms takes place and then remain stationary when the normal weight is reached. If at any time during the treatment weight is lost the dose must be lessened or the drug discontinued. The patient's weight is thus an accurate indication of the amount of improvement that is taking place. Some authorities state that mercury is best tolerated for a long period in the form of the tannate. I have used this preparation in two or three cases but have not seen enough of it to give a definite opinion.

For the temporary relief of headache, phenacetin, antipyrin, antikamnia, or aspirin should be used. I have found citrophene in doses of five grains often useful. If one drug fails another should be tried, for there are very few people to whom one of them at least will not give some relief. Unfortunately, however, the relief is usually but short. Localised headache may sometimes be greatly relieved and sometimes cured by that old-fashioned and much neglected remedy, the seton. It should be applied close to the site of pain and be used for three or four weeks continuously.

The insomnia which is so frequently present can often be treated satisfactorily without resource to drugs, but their use is justified in severe cases, for regular sleep is of the first importance. One of the most satisfactory drugs is veronal and this may be ordered in ten-grain doses each night. Small continuous doses are given, so that the physiological effect is gradually produced. Very little result may be noticed for the first few nights, but in two or three weeks the patient will probably be sleeping regularly and well. The dose should then be reduced to five grains each night and in a fortnight or so left off. There is one other measure to which I must refer which is of the greatest value in soothing the irritability and in allaying the depression and that is the oft-abused pipe. Smoking does no harm in these cases; it usually does great good by quieting the nervous system. Let the patients, then, smoke as much as they wish.

I will now proceed to discuss the *operative treatment* of these common conditions which follow injuries of the head. I shall not refer here to traumatic epilepsy and traumatic insanity as these will be dealt with in my next lecture. We shall have to consider the indications for operation and the nature of the operation to be performed. I must first draw attention most emphatically to the fact that the operation of trephining *per se* involves practically no risks. It is, in fact, one of the safest and simplest operations in surgery. It is now being recognised in the profession that the risks of an exploratory laparotomy are practically negligible, but it is not yet recognised that the same is true of simple trephining. Unfortunately, the wide and free access cannot be obtained by trephining as by abdominal section, but localisation in cerebral surgery is as accurate as in abdominal surgery, and if larger openings be made into the skull we can usually reach the diseased part. I would urge, therefore, that trephining should be performed far more frequently and at a much earlier date than is usually the custom for the following reasons. The operation is practically devoid of risk when, as is often the case, the dura mater is not incised and in any case it is an extremely safe one. The second and more cogent reason is that the results are most excellent and constant in properly selected cases.

I shall speak mainly of the treatment of cephalalgia, for in the cases with which I am dealing it is this symptom which most often calls for operation and the removal of its causes will usually result in the cure of associated mental disturbances. In discussing the operative relief of cephalalgia it is necessary to bear in mind the different varieties of this condition. The generalised forms of headache are usually amenable to non-operative measures and those which prove rebellious can only be treated surgically if some distinct localising lesion be present—that is to say, generalised headache without any local lesion is not likely to be cured by operation. Supposing now that there is diffuse headache and that a scalp wound or evidence of an old fracture is present what is to be done? In such cases I believe that the best practice is to carry out carefully the non-operative treatment to which I have already referred for a period of six months and if at the end of this time no improvement has taken place then the site of the injury should be exposed and dealt with according to circumstances. In the localised forms of cephalalgia the treatment is more clear and operation is indicated in all cases in which pain is intense and has proved uncontrollable by milder measures. In the neuralgic variety the whole scar should be freely excised down to the bone, pericranium being included if it appears in any way altered. The most satisfactory cases are those in which osteo-sclerosis is the cause of the pain and I have seen several cases promptly and completely relieved by trephining. A large flap is turned down and the diseased bone is very freely removed: if the dura mater is thickened it should be cut away; the scalp flap is then replaced. When the localised headache is not due to lesions in the scalp or to thickened bone the operation is of an exploratory character and its nature will be determined

by circumstances. The lesions met with and the treatment to be adopted are the same as in cases of traumatic epilepsy. In many instances we shall find unsuspected depressions of the bone; sometimes these will be found to have involved the inner table only, having presented no external evidence of their existence. Splinters of bone may be discovered pressing inwards or actually penetrating the dura mater. We must never omit to explore the inner surface of the bone by passing a probe between it and the dura mater for some distance around the trephine opening. Thickening and adhesions of the cerebral membranes are best treated by excision of the part of the membranes involved; any measure short of this will fail. Intrameningeal cysts containing blood or serum may be found but can seldom be diagnosed before the dura mater is opened. The smaller cysts can often be removed entirely; with the larger ones this is impossible. In the latter case the cyst should be opened, its walls cut away as far as possible, and the remaining part treated by gentle scraping and the application of a solution of 1 part in 10 of carbolic acid. Unless this is done a persistent sinus may follow. If in the course of the operation we have reached the cortex of the brain without finding any definite lesion to account for the symptoms the cerebral cortex must be carefully scrutinised and palpated. Cortical cysts are occasionally met with; if superficial they are readily recognised, if deep we find some localised tumidity, impairment or absence of the cerebral pulsation, and a feeling of increased resistance on palpation. In doubtful cases a long narrow scalpel should be introduced directly into the region of the suspected cyst. The other lesion which may be found comprises scarring and sclerosis of the cortex. In such cases it has been proposed that the diseased area should be excised but I believe that more harm than good will usually be done. If as the result of the operation no lesion of any kind is found we have at least the satisfaction of knowing that cure of the symptoms may follow, although we can apparently point to no step in the operation which is responsible for this result.

I must briefly refer to one or two of the most general steps of the operation. First, the simple trephine is undoubtedly the best means which we possess at present for opening the skull. Numerous other mechanical and electrical devices have been invented to take the place of the trephine but these all fail in one essential point: the sense of touch is lost by their use. In addition they are complicated, difficult to keep aseptic, and very liable to get out of order.

Secondly, large trephines only should be used and all trephines with a diameter of less than one inch should be abolished for these operations. It is essential for success to start with a large opening. If a half-inch crown of bone be removed it is impossible as a rule to deal adequately with the diseased parts; whilst to start with a small opening and to enlarge it afterwards is a slow and unsurgical method. For general purposes a trephine with a diameter of one and a quarter inches is most serviceable. There is one other instrument which is indispensable in these operations and that is Hoffmann's bone-cutting forceps. They are the most useful means of rapidly enlarging the trephine opening in any required direction.

The third point which I wish to bring forward here, is that if it is decided to deal with any extensive lesion of the brain itself the operation must be performed in two stages. The only argument which I need adduce in favour of this proposition is that the mortality in these operations if completed in one stage is very high, patients being unable to withstand the serious shock resulting, whilst if the operation be performed in two stages comparatively little shock follows. At the primary operation, then, a large opening in the skull, usually about three inches in diameter, is made and the flap which has been raised is sutured into place again. A fortnight later the flap is turned down and the diseased area is dealt with.

Lastly, there is the question of adhesions between the brain and the overlying tissues after operation. When thickened and adherent meninges have been excised it is clear that extensive adhesions may form and a strongly contracting cicatrix may result. The objects of the operation will thus be defeated and symptoms will recur. It is useless to talk about the prevention of adhesions: they will form in spite of anything that may be done. Our aim must be to reduce them to a minimum. In order to effect this various substances, such as gutta-percha tissue, egg-membrane, and gold foil, have been placed between the cortex and the structures lying over it. Of these I believe that gold foil is the best at the present time. In the future we may discover some more natural tissue for the purpose. The gold foil is cut very slightly larger than the opening in the dura mater and is then carefully inserted between the brain and the cut edges of the dura mater, the greatest care being taken to leave it lying quite smoothly. The bone, of course, is not replaced.

To sum up briefly, the following are the conclusions to which I have come in regard to treatment. 1. In rather more than half of the cases cure may be brought about by medical measures; prolonged mental rest and the proper administration of mercury are the essential points. 2. In a few of the cases the symptoms are mainly due to chronic osteo-sclerosis and such cases may be almost certainly cured by trephining. 3. In the remainder of the cases the symptoms are more persistent and do not yield to general measures or to the removal of thickened bone only. I believe that in such cases these symptoms are the reflex results of lesions or irritations of the dura mater; and if the injury has involved the vault of the skull cure can be effected promptly by excision of the thickened or adherent dura mater and removal of any other source of irritation which may be present.

A CASE OF
RUPTURE OF A TUBAL PREGNANCY ON THE NINETEENTH DAY AFTER CONCEPTION AND TEN DAYS AFTER THE UTERUS HAD BEEN CURETTED.[1]

BY WILLIAM DUNCAN, M.D., F.R.C.S.,
OBSTETRIC PHYSICIAN TO THE MIDDLESEX HOSPITAL.

THE patient, aged 27 years, was married in 1900. She consulted me in October, 1901, for menorrhagia. The periods, which commenced at the age of 12 years, were quite regular, lasting four days, until the early part of 1901, when they began to increase in amount, with pain, the passage of clots, and a muco-purulent intermenstrual discharge. The patient was a healthy looking but pale woman of very active temperament. On examination the uterus felt a little enlarged, was somewhat tender on palpation, in normal position, and freely mobile. Nothing abnormal could be felt in either the lateral or posterior fornices. Per speculum the os uteri was eroded and some purulent discharge was seen exuding from it. I diagnosed fungous endometritis and recommended that the uterus should be curetted. The patient went into a nursing home and I dilated the uterus (under anæsthesia) up to No. 14 Hegar and scraped away a very hypertrophied endometrium; the uterus after having been swabbed out with liquor iodi was packed with iodoform gauze for 48 hours. At the end of that time the gauze was removed and a vaginal douche of a 1 in 4000 solution of perchloride of mercury was ordered to be given night and morning whilst the patient remained in the home (this is my usual method of treatment after curetting the uterus). The patient made a perfectly uneventful recovery and returned home well after three weeks. I saw nothing more of her until the beginning of last November (1903) when she again consulted me for a recurrence of the menorrhagia. She then informed me that she had had a miscarriage at the third month at Christmas, 1902, and that since that time the periods had been excessive and with clots. Since the miscarriage *she had never missed a period*. On examination I found a similar condition of things to that present when she consulted me in 1901, except, perhaps, that the uterus was somewhat more bulky than on the former occasion, but nothing whatever abnormal was detected in either fornix. As the next period was due in a few days it was decided that the curettage (which I again advised) should be deferred until a couple of days after the period had ceased. This occurred on Nov. 14th after a week's loss; accordingly, on Nov. 16th I went to the patient's home and with the assistance of Mr. Arthur John Hogg of Ealing (under whose care the patient had placed herself and

[1] A paper read before the British Gynæcological Society on Feb. 11th, 1904.

to whose skill and unremitting attention the favourable termination of this most interesting case is largely due) I again curetted the uterus, removing (as on the former occasion) a very hypertrophied endometrium, but one which did not in the least raise in my mind the suspicion of its being a decidual membrane. The patient progressed uninterruptedly well, having neither pain nor rise of temperature until Nov. 25th, when rupture took place. At 9 P.M. on that day Mr. Hogg rang me up on the telephone and asked me to go to see the patient as she was ill. He told me that he had paid his usual visit about 2 P.M., when she was quite well, laughing and joking and saying that she would get up next day. On returning home from his round of professional visits at 7 P.M. he found a letter from the nurse asking him to send something to relieve the patient as she complained of pain at the chest and indigestion. Almost directly after reading this letter he received an urgent message asking him to go at once to see the patient. This he did and on arrival he found her collapsed, pulseless, semi-conscious, and tossing about in bed with gasping respiration. He at once injected strychnine hypodermically and put hot bottles, &c., to the extremities in order to remedy the collapsed condition. As the state of the patient continued serious he (as I have mentioned) summoned me. On my arrival soon after 10 P.M. I found the patient practically moribund, pulseless, blanched, with the lips and gums very pale and the extremities cold. On palpating the abdomen I found dulness in both flanks and over the hypogastrium; I thought also there was diminished resonance over the liver. It was evident there was internal rupture of something, with hæmorrhage, also that abdominal section, unless associated with or preceded by transfusion, would be certainly fatal, so not having the necessary apparatus and instruments I at once telephoned to my colleague, Mr. A. Pearce Gould, and fortunately found him at home and got him to come out immediately. Whilst waiting his arrival we prepared in readiness the operating table, also plenty of sterilised water. Mr. Gould arrived soon after midnight. The patient was at once placed on the table and was skilfully put under the influence of ether by Dr. R. P. Cockburn. Mr. Gould first started the infusion of saline fluid into the left submammary cellular tissue and handed the care of this over to Mr. Hogg, whilst he opened the left cephalic vein and performed intravenous transfusion (also of saline fluid). Immediately this transfusion was thoroughly started I opened rapidly the abdominal cavity which was found to be full of liquid blood, with some clots; the right uterine appendage was brought into view and it proved to be normal, but when the left appendage was drawn out it was seen that there was a small round perforation of the somewhat thickened tube near the uterine end (see Fig. 1). The broad ligament was quickly

FIG. 1.

Left ovary and Fallopian tube showing ruptured gestation sac close to uterine end of the tube.

transfixed and tied in the usual way and the tube and the ovary were removed; most of the blood was sponged out from the abdominal cavity, which latter was also flushed with a lot of sterilised water, some of which was left inside; the abdominal wall was sewn up in three layers. Whilst this operation was proceeding nearly two quarts of saline fluid had been injected (submammary and intravenous). After the operation (which lasted from 20 to 30 minutes) the patient was returned to bed, still in an extremely dangerous condition, although the pulse was faintly perceptible at the wrist. Hot bottles were applied and injections of strychnine and an enema of brandy and beef-tea were administered per rectum. When Mr. Gould and I left we could only give the relatives slight hope, everything of course depending on whether the patient could be kept alive for the next few hours. We left her in Mr. Hogg's care. At about 9 A.M. he telephoned the welcome news that the patient was alive, that her pulse was better and her temperature was normal, and that she was able to take nourishment. The subsequent history can be related in few words. The patient made an uneventful recovery and is now (Jan. 30th, 1904) quite well and getting about as usual.

This very interesting case presents several points for consideration.

1. The duration of pregnancy before rupture took place can be accurately stated to be the nineteenth day, as after recovery I went to see the patient in order to make sure of the date. She informed me that coitus took place on the Friday before her period commenced (namely, Nov. 6th) and not for some time previously. Before questioning her I expected to hear that coitus had occurred on either of the two days which intervened between the cessation of the period and the curettage; this would have given 11 or 12 days before rupture. However, the patient was very positive that no coitus took place on either of those dates. So far as I can ascertain there is only one other case recorded in which rupture of a tubal gestation took place as early as the nineteenth day; that is one reported by Mr. E. Rumley Dawson.[1] In that case the rupture, which was near the uterine end of the tube, is said to have occurred on the fifteenth day; the patient was a multipara and had not missed a period; internal hæmorrhage was diagnosed but no operation was performed and the ruptured tubal gestation was only discovered post mortem.

2. As regards diagnosis, when I first saw the patient there could be no question that she was suffering from fungous endometritis and although a tubal gestation was present *when I curetted the uterus*, seeing that it was only nine days old and that the history of the case was totally against pregnancy, I think it will be considered excusable my having failed to detect the slight enlargement of the left Fallopian tube which must have been present when I examined the patient under anæsthesia before proceeding to curette the uterus. The more I see of cases of extra-uterine pregnancy (both in hospital and in private practice) the less value do I know can be placed on the history of a patient "having missed one or two periods." In many of these cases no such history can be obtained by the most careful questioning.

3. When Mr. Hogg rang me up on the telephone I confess I did not attach as much importance as I ought to have done to his statement that the patient (a few hours after he had seen her perfectly well) was collapsed and pulseless. I could not imagine anything having gone wrong in the pelvis ten days after curetting the uterus. However, on my arrival at the house, seeing the patient blanched (she was naturally pale) and pulseless and finding dulness in the flanks and over the abdomen, it was at once obvious that rupture of something had taken place with extensive hæmorrhage which would ere long prove fatal unless operated upon. It seemed to me that the diagnosis lay between (*a*) rupture of a tubal gestation and (*b*) perforation of a gastric ulcer with profuse bleeding. I leaned to the gastric ulcer view, as not only was the history completely against tubal pregnancy but also I could not imagine myself failing to detect an enlarged tube; the fact also that on the afternoon of the accident the patient had complained of indigestion and pain at the epigastrium helped to obscure the diagnosis.

4. Whatever the cause of the condition was, it was perfectly certain that the abdomen must be opened, as no one suffering from rupture of any internal organ with severe hæmorrhage should be allowed to die without an exploratory operation having been performed. In this case the patient was too bad to be subjected to a severe operation without first (or at any rate simultaneously) transfusing her, and as I had not taken my transfusion apparatus with me it was indeed fortunate to be within telephonic reach of skilled help and all the necessary instruments. This case teaches the lesson always to carry a transfusion apparatus.

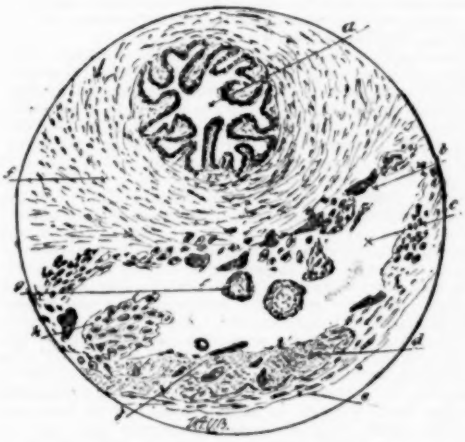
5. With regard to the parts removed it will be seen from

[1] Transactions of the Obstetrical Society of London, 1893, vol. xl., p. 155.

Fig. 1 that the thickening of the Fallopian tube was comparatively slight, limited to the uterine half of the tube, and that the rupture took place near the uterus.

My friend Dr. W. F. Victor Bonney (obstetric registrar and tutor at the Middlesex Hospital) has made some excellent microscopical sections across the gestation sac and a beautiful drawing of one of these is here reproduced (Fig. 2). This

FIG. 2.



Transverse section of pregnant tube showing that the gestation sac is outside the lumen of the tube. ×75. *a*, Fallopian tube; *b*, syncytial mass; *c*, gestation cavity; *d*, blood spaces in walls of cavity; *e*, remains of tube wall and peritoneum; *f*, muscular wall of tube; *g*, villus; *h*, mass of large chorionic cells; and *j*, syncytial mass.

very clearly shows the gestation sac to be altogether away from the lumen of the Fallopian tube and proves that what happens when a tubal gestation occurs is this, "the minute embryo burrows through the epithelial lining of the tube into the muscular coat where it develops.

Pathological Report (on the parts removed) by Dr. VICTOR BONNEY.

"The specimen consists of a Fallopian tube and attached ovary. The tube appears normal to the naked eye except at the junction of the isthmic and ampullary portions; here is situated a small hollow enlargement communicating with the outside by means of a clearly punched hole through which a small pencil might be passed. The cavity is principally in the tube wall, its outer wall being formed of thinly stretched tubal peritoneum, whilst its inner boundary is evidently in close connexion with the tubal lumen, though whether it communicates with it is impossible to determine without cutting transversely across the tube at this point. On a transverse section being made across the tube on the uterine side of the punched-out aperture it is seen that the cavity is situated in the wall of the tube and does not communicate with the tubal lumen at any point. Its outer wall is very thin, consisting practically of peritoneum only, but that towards the lumen of the tube is thicker and contains muscle elements. The course of the lumen of the tube is marked on the inner wall of the cavity as a curved elevated ridge much in the same way as the course of the aqueductus Fallopii is indicated on the inner and posterior walls of the tympanic cavity when the middle ear is opened up for dissection. The cavity contained clot and portions of chorionic villi.

"*Microscopically* the following appearances are seen. A considerable section of the tube and its contained gestation sac were removed and the continuity of the specimen restored by sutures. This section was then prepared and cut in serial sections to the number of about 150. The appearances of individual sections were practically the same. The tubal lumen appears intact and is separated from the gestation sac by a well-marked muscular layer (capsularis) of considerable thickness (see drawing of microscopical section, Fig. 2). The plicæ appear perfect, as is also the case with the columnar epithelium covering them. The tube is empty. The gestation sac is situated in the outer part of the tube wall. It contains well-marked chorionic villi with a distinct epithelium consisting of the two layers known as Langhans' and syncytial respectively. In many parts, however, a much greater thickness of the syncytial layer is observable and in those parts of the section where the villus was applied to the wall of the gestation sac these proliferating syncytial masses could be seen infiltrating the sac wall. The sac wall contains many spaces with blood, part of which appears to be surrounded by cells of embryonic origin. Many large cells, resembling decidual cells, are seen in the sac wall but these are continuous with masses of syncytium and in all probability are of embryonic and not of maternal origin. There, therefore, is an absence of any structure which could be described as 'decidual' and it is probable that such cells are strictly the derivative of the stroma cells of the endometrium and, therefore, do not occur when the ovum is situated in the midst of muscular tissue as (in the absence of a subepithelial stroma) it appears to be in tubal gestation. To this absence of decidual cells is probably to be ascribed the rapidity with which a tubal gestation erodes the walls of the gestation sac and brings about early rupture. The specimen is of great interest, bearing out as it does the views put forward by all the modern German authorities and lately epitomised in England by Dr. H. Russell Andrews that in all cases the implantation of the tubal gestation is in the muscular wall of the tube and not (as was formerly supposed) on the surface of the tubal epithelium and therefore within the tubal lumen."

Harley-street, W.

SOME CLINICAL ASPECTS OF THE RHEUMATIC INFECTION.

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MEDICAL REGISTRAR TO ST. MARY'S HOSPITAL, LONDON.

MANY writers—of whom W. B. Cheadle,[1] T. Barlow,[2] Angel Money, and J. F. Poynton and A. Paine[3] may be mentioned—have spoken of the striking histological similarity shown by several of the rheumatic lesions, notably, the subcutaneous nodule and the various forms of cardiac inflammation, valvular, muscular, and pericardial, the features common and essential to each being more or less tissue necrosis surrounded by a zone of cellular proliferation which subsequently gives rise to fibrosis, the whole fading into normal tissue by way of gradually diminishing hyperæmia. Translating this piece of morbid anatomy into terms of morbid physiology, one may say that microscopical evidence goes to prove a similar reaction on the part of the body to rheumatic infection, whatever the organ or tissue affected.

The question naturally arising in one's mind is, Can one find clinical features of this reaction to rheumatic infection which, broadly speaking, appear whatever structure is affected? If the commoner forms of rheumatism—namely, articular, cardiac, and cerebral—be examined it is possible to find a certain clinical analogy which will now be briefly stated and illustrated by cases. In each of these forms of rheumatism can be found two extremes. At the bottom of the scale are the apparently transitory cases, in which the body seems to defeat its invaders easily: at the top of the scale are malignant cases—those in which the resistance offered to infection is of the feeblest. Between these extremes one finds absolutely every degree of disease: a more or less evenly balanced fight is waged between tissue and organism, leaving its mark on the former in the nature of connective-tissue overgrowth. This in turn produces more or less crippling of the tissues and interference with their functions. These cases of protracted infection fade at one end of the scale into those of the mild degree by way of cases with frequent relapse and recurrence; at the other end into the malignant varieties by way of chronic cases ending in a malignant outburst. The same idea is expressed by Garrod,[4] who classifies rheumatic manifestations into

[1] Harveian Lectures, 1888.
[2] Brit. Med. Jour., Sept. 15th, 1883, p. 509.
[3] THE LANCET, May 4th, 1901, p. 1260.
[4] Treatise on Rheumatism, 1890 edition, p. 11.

"hyperæmic" and "fibrous" varieties (corresponding to the "transient" and "protracted" varieties of this paper). He does not, however, recognise a "malignant" class, though this has recently been done by Poynton and Paine in a paper on malignant rheumatic endocarditis.[5]

The following cases are quoted as representative of the transient, protracted, and malignant varieties of rheumatic infection of the joints, the heart, and the brain. Arthritis is perhaps the best to begin with, because it is the most familiar of all rheumatic lesions. Indeed, till recent years the word "rheumatism" stood in the first place for all forms of articular pain and after that unfortunately became a "rubbish-heap" sort of word, to which all sorts of pains of unknown pathology were consigned. This error is passing; still to the majority the term "rheumatism" calls up the picture of a particular form of multiple arthritis and not of a definite systemic infection.

The transient degree of arthritis is so familiar that one scarcely need describe a particular case. A girl 18 years of age falls ill rather suddenly with pains all over her, perhaps preceded by a sore-throat; she becomes feverish and has to stay in bed. Her joints are found to be slightly swollen, pink and hot, and very painful whenever they are moved. Those first affected get well while others are freshly involved. There is a notable similarity between such a condition and the polyarthritis produced by inoculations of animals with micrococci in the experiments of Wassermann and Malkoff,[6] Poynton and Paine,[7] Ainley Walker and Beaton,[8] and Shaw.[9] There are free acid sweats and the tongue is thickly coated with a white fur. She is given salicylate of sodium; the temperature falls from 101° F. to normal in two or three days and in five or six days she is free from pain. This is called recovery; but one must bear in mind the great commonness of relapse and of recurrence in after years. These seem to indicate a less complete triumph on the part of the body than would at first sight appear and at the same time form a link with the group of cases next exemplified—the protracted forms of rheumatic arthritis.

Many patients who have had repeated attacks of acute rheumatic arthritis show permanent thickening of the joints, ulnar deviation of the fingers, &c. There are between the acuter pains of the rheumatic outbursts a slight, but none the less real, constant disability and stiffness, with occasional aches and pains, suggesting that perhaps the recurrent acute attacks are merely the bursting into flame of an infective process all the time quietly smouldering. This kind of thing was well exemplified by the following case which was recently treated in St. Mary's Hospital under the care of Dr. Cheadle.

CASE 1.—The patient, a man, aged 21 years, had rheumatic fever for the first time in November, 1901, while he was serving in South Africa; there was no preceding gonorrhœa, dysentery, &c. He was invalided home with "rheumatic fever and V.D.H." He went home and rested a month. All this time he had rheumatism, mostly in his toes and fingers. Then he went to work but the pain in his feet compelled him to give this up. He rested for a week and then tried to work once more. Since then he has had 15 situations, the longest being held for six weeks. Each had to be given up on account of pain and swelling in the feet. His hands were also affected in the cold weather. Three weeks before admission he had a severe attack, beginning in the feet and knees and spreading to his fingers. This was, however, by no means the worst attack of all. There were fever, malaise, and sweating as in all previous exacerbations. On admission various joints were swollen and were pink and painful. Ten days later these acute signs had gone but the metacarpo-phalangeal joints of the forefingers and middle fingers of both hands showed thickening with crepitus and stiffness, especially in the forefingers. Similar but rather less marked changes were observed in the proximal interphalangeal joints of the same fingers, and still more definitely were they present in the corresponding joints of the corresponding toes, which were very stiff and much deformed. There were interosseous wasting in the hands and in the toes fine rhythmic tremor on attempts at flexion. He had early mitral stenosis.

Here, then, is a case illustrating the running fight between joints and micro-organisms and at the same time throwing light on the pathology of the type of crippling polyarthritis met with chiefly in young and middle-aged women. Of these there are, however, cases in which the destruction of articular surface is greater than could be achieved by infection of the degree of intensity represented by the case just described. It has frequently been suggested[10] that some at any rate of these cases of extreme arthritis deformans are really due to a destructive rheumatic invasion and the following case goes to support that suggestion.

CASE 2.—A woman, aged 42 years, was admitted to St. Mary's Hospital under the care of Dr. S. P. Phillips after being for three weeks in bed suffering from painful swelling of the feet and the legs. At the age of 21 years she had had rheumatic fever but between then and now she had suffered in no degree from joint pains or from anything else except confinements. There were free acid sweats; the only cardiac sign was a transient systolic murmur at the apex, and there was slight pyrexia. The joints especially affected proved to be the metacarpo-phalangeal joints of the forefingers and the middle fingers on both hands. These were hot, pink, and swollen, with thickening, apparently bony, and consequent ulnar deviation of the fingers. The corresponding thumb-joint was affected and there was considerable interosseous wasting. The right wrist-joint contained fluid and showed very distinct bony thickening and crepitus. The metatarso-phalangeal joints of the great toes were also thick and showed lipping. In the shoulder-joints there appeared to be much bony overgrowth with loss of mobility. The lower border of each patella and the outline of each ligamentum patellæ were obscured by what seemed to be thickened synovial tissue. Salicylate was effective in removing the signs of acute disease though other means of treatment had been unsuccessful.

In this case, then, a patient's joints, infected apparently by rheumatism, underwent deforming bony changes in less than a month. In connexion with this it is useful to remember that small diplococci were found in the osteo-arthritic joint of a man who died from carbolic acid poisoning and that intravenous injection of such cocci set up rheumatoid changes in rabbits.[11]

So far, therefore, we have seen that rheumatic infection can produce a transient arthritis, a protracted arthritis, and a rapidly deforming arthritis which may well be called malignant. Similar degrees may be recognised in the results of rheumatic infection of the heart. For the present purposes it will be well to separate endocarditis, myocarditis, and pericarditis while fully recognising their actual interdependence.

Taking the endocardium first, one has to acknowledge the impossibility of speaking decidedly on the question of the occurrence of transient forms of rheumatic infection. Still, it may be worth while to remark that the disappearance of murmurs apparently due to acute valvular endocarditis has led many (including Cheadle,[12] Byrom Bramwell,[13] and Sansom[14]) to suppose that transient rheumatic endocarditis does occur. The following case may be quoted as an example.

CASE 3.—A boy, aged eight years, was admitted to St. Mary's Hospital under the care of Dr. Phillips on June 3rd suffering from rheumatic arthritis which quickly subsided. On admission he was found to have mitral disease and during the three weeks subsequent to admission he developed well-marked signs of aortic incompetence. The temperature ran between 99° and 102° F. till June 22nd, when it fell to, and remained at, normal. On the 27th it was found that the previously distinct aortic diastolic murmur could no longer be heard and I believe it did not return again.

It is, of course, easy to find cases of protracted rheumatic endocarditis where the severity of the process and the gravity of the permanent results are proportional to the irrepressibility of the infection. A case of unusual interest will be used as illustration of this group.

[5] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxv.

[6] Berliner Klinische Wochenschrift, 1889.

[7] THE LANCET, Sept. 22nd (p. 881) and 29th (p. 932), 1900, and May 4th, 1901 (p. 1260), &c.

[8] Brit. Med. Jour., Jan. 31st, 1903, p. 237.

[9] Journal of Pathology and Bacteriology, December, 1903.

[10] As long ago as 1859 Sir Samuel Wilks, in his lectures on Pathological Anatomy, said: "The cardiac inflammation of a rheumatism may become ulcerative, and at the same time the joint disease may put on a destructive severity."

[11] Poynton and Paine: Transactions of the Pathological Society of London, vol. liii., Part ii., 1902.

[12] Harveian Lectures, 1888.

[13] Diseases of the Heart, 1884 edition, p. 371.

[14] Diseases of the Heart and Aorta, 1892 edition, pp. 40, 41.

CASE 4.—The patient was a female, aged 26 years, who was admitted into St. Mary's Hospital under the care of Dr. D. B. Lees, with rheumatic pains of a few days' duration. She had had rheumatic fever at 20 and at 24 years of age. The arthritis improved under treatment; once or twice, however, during her stay in hospital it relapsed feebly. She also had pleurisy on the left side, with pain and rub, from time to time, but by no means constant (this probably indicated a quiet pleuro-pericarditis, but no definite signs of pericarditis were found). There was fever, at first remittent and later intermittent, extending over two months. Meanwhile an aortic diastolic murmur appeared (being first noticed while there was fever, but no arthritis or pleurisy) and gradually became more and more definite; the pulse at the same time gradually assumed the distinctive collapsing character. There were much sweating, great anæmia, and occasional slight albuminuria. For some time the endocarditis was thought malignant in degree but her fever subsided and she was able to go back to her friends. This case, then, represents a prolonged fight between valve and micro-organism, in which the valve was, for the time at least, victorious but suffered irreparable damage.

The next case is one of malignant rheumatic endocarditis.

CASE 5.—A man, aged 22 years, was admitted to St. Mary's Hospital suffering from feverishness and sweating. He gave a history of acute rheumatism at the ages of six and ten years. At 16 years of age he became short-winded and two months before admission he gave up work, went short of food, and got wet. His joints became painful and kept him in bed for three weeks, after which he was admitted to hospital under the care of Sir William H. Broadbent. There were free sweating and irregularly hectic fever; he was clearly very ill and had signs of mitral disease. Two days before death he lost power in his left limbs; this was followed by a gradual loss of consciousness. Post mortem the endocardium of the left auricle was found to be ulcerated in one patch. There were thick masses of fibrin on the mitral valves and many of the chordæ tendineæ were torn. There were old infarcts in both kidneys and recent ones in the right lung and in the brain. The latter had given rise to aneurysm of the right middle cerebral artery and subsequent hæmorrhage. Similar changes have been found in rabbits dying after experimental inoculation with the micrococcus of rheumatism.[15]

Myocarditis will only receive brief consideration here as it is so intangible clinically. Of the transient type the following will serve as an example.

CASE 6.—A woman, aged 29 years, who was admitted to St. Mary's Hospital under the care of Dr. Lees for her first attack of acute rheumatism, had normal cardiac signs till several days after admission, when the sounds became poor and the impulse diffuse and increased in area to the left. The cardiac dulness was also increased to the left and the pulse became slow and irregular. A systolic murmur appeared at the apex. Under the influence of rest, &c., all these signs disappeared completely.

As regards chronic myocarditis with fibrosis I can offer no clinical example. Such a condition does, however, exist in association with mitral and with pericardial fibrosis due to rheumatism.[16] No doubt these myocardial changes must make a great difference to the patient's power of compensation in valvular disease, but at present our methods are too coarse to enable us to appreciate this factor clinically.

Can myocarditis of rheumatic origin cause death of itself? Herringham has reported such a case.[17] A patient, who presented signs and symptoms of acute rheumatism with old-standing mitral disease, died suddenly in St. Bartholomew's Hospital. Post mortem there were found minute valvular vegetations and pericarditis of the slightest degree. The cells of the cardiac muscle showed cloudy swelling and fatty change, with considerable overgrowth of the connective tissue. This is as much as one can say of myocarditis from the present standpoint. In the pericardium, however, it is easier to trace the various grades clinically.

The following case is an example of transient rheumatic pericarditis, which is common enough, though, in children especially, the mischief done is often not so transient as it seems at first to be.

CASE 7.—A man, aged 35 years, was admitted to St. Mary's Hospital under the care of Dr. Cheadle. He was taken ill on June 29th, 1900, with joint pains; on July 4th pain in the chest with dyspnœa supervened and on the 7th he was admitted. He was feverish and sweating; his joints were still swollen and painful. His cardiac dulness was increased both ways and there was a loud to-and-fro rub all over the præcordium. There were signs of consolidation at the left base. Within a week both temperature and cardiac signs were normal and he was discharged on July 23rd.

Examples of progressive pericardial fibrosis are, unfortunately, common among rheumatic children. The following is an illustrative case.

CASE 8.—A girl, aged 12 years, was admitted under the care of Dr. Cheadle in July, 1902, for dyspnœa beginning three weeks after articular rheumatism. She also had chorea, for which a year previously she had been in St. Mary's Hospital; on that occasion her heart was normal. On admission in July, 1902, her heart was very big; there were a rough præcordial rub and a mitral systolic murmur. The veins in the neck were swollen and pulsating. There was fever in bursts—a type of pyrexia rather characteristic of rheumatic endo-pericarditis. The rub disappeared, otherwise the heart remained the same. The general condition improved and she went out. In April, 1903, she came back with intense dyspnœa and cyanosis, enlarged liver, &c. There was an aortic diastolic murmur and a pleuro-pericardial rub was heard several times for a day or two at a time. Fever was persistent and there were crepitations at the left base. She died suddenly 16 days after admission. Post mortem there was found to be universal adhesion with thickening of the pericardium and only slight recent endocarditis with scarring of the mitral and aortic valves. The myocardium, especially of the right ventricle, was pale and flabby. There was some slight recent pleuro-pericarditis on the left side of the heart and the mediastinal glands were enlarged. In a similar case Dr. J. F. H Broadbent found small cocci—corresponding in staining, &c., with the micrococcus rheumaticus—in these enlarged glands.

This, then, was a case of protracted rheumatic pericarditis where an acute outburst proved the "last straw" to a heart hopelessly crippled by its fibrous prison. A case of malignant rheumatic pericarditis comes next.

CASE 9.—A girl, aged 18 years, was admitted on Nov. 24th, 1880, to St. Mary's Hospital under the care of Sir William Broadbent. She was suffering from rheumatic arthritis of five days' duration and had suffered similarly nine years previously. Her heart was dilated and feeble, the sounds being distant. There were erythematous patches on her legs and a trace of albumin in her urine. The arthritis persisted. There was delirium at night and soon a loud pericardial rub was heard. The temperature kept high and on Dec. 4th she died. Post mortem the pericardial sac was found to contain two ounces only of turbid fluid. Both pericardial layers were swollen and the opposed surfaces were plastered with fibrin. Immediately beneath the visceral pericardium the heart muscle was pale. Death in this instance must have been due to toxæmia and to yielding of the sodden pericardium allowing of acute dilatation.[18]

Our scale of cardiac rheumatism is now as complete as it can be made. It has not been possible to speak positively, from clinical standpoints, of the occurrence of transient endocarditis or of myocardial fibrosis, but it has been shown that the one perhaps occurs and that the other is found post mortem.

Now, lastly, is it possible to trace this gradation of results of rheumatic infection of the brain—i.e., of rheumatic chorea? The transient case of chorea is always with us, though, as in the joints and the brain, the infection often proves more enduring than is at first expected. It is quite common to get a history of chorea in the earlier years of young adults with mitral stenosis, one definite attack occurring without relapse or recurrence. Further, many children with rheumatism are in a "choreiform state"; the fingers are unsteady and hyperextended when held out straight; the face is unduly mobile and so are the emotions. All these signs may subside and never return or they may in the course of days, weeks, or months, develop into a full-blown chorea. The chronic cases are as familiar. One

[15] Shaw: Journal of Pathology and Bacteriology, December 1903. Poynton and Paine: Transactions of the Royal Medical and Chirurgical Society, vol. lxxxv.

[16] Fisher: Bristol Medico-Chirurgical Journal March 1900. Cowan: Journal of Pathology and Bacteriology, December, 1903. Carpenter: THE LANCET May 30th, 1903, p. 1508.

[17] Transactions of the Clinical Society vol xxxi. A similar case is described by Dr. George Carpenter in THE LANCET of May 30th, 1903, p. 1569.

[18] A paper by Dr. W. Hale White, Guy's Hospital Gazette, November, 1903.

example is that of a boy who was recently under the care of Dr. Lees both at the Hospital for Sick Children, Great Ormond-street, and at St. Mary's Hospital. He had had choreic movements continuously for a year and according to his mother for over 18 months. Another continuous case is that of a girl, aged 11 years, who had chorea, arthritis, and endocarditis in February, 1903. In April she had very slight twitchings of the hands and the face. In June and September she had well marked chorea and again in January, 1904. This waxing and waning of symptoms in a chronic course are very characteristic of these protracted forms of rheumatism; compare the case of pericardiac fibrosis described just now and the outbursts of fever with effusion into osteo-arthritic joints which form the milestones of such cases.

Malignant chorea is happily rare. Death is usually due to cardiac complications; however, here is a case in which the cerebral lesion was responsible for the fatal issue.

CASE 10.—A girl, aged 18 years, was admitted to St. Mary's Hospital under the care of Sir William Broadbent on May 16th, 1887, suffering from chorea. This had been preceded by several weeks of rheumatic polyarthritis—her first attack. The chorea was very severe but she was at first able to swallow food. There was delirium with incontinence of urine and fæces. The arthritis persisted but there were no signs of cardiac disease. The temperature steadily rose and she died on May 30th, refusing food for the last two or three days. The post-mortem examination showed slight aortic valvulitis, the surface of the brain and the choroid plexuses were congested, there was an excess of cerebro-spinal fluid, and on the under surface of the right lobe of the cerebellum some recent lymph was found.

Many observations on the changes found after death in the brain of choreic patients are now on record, the general trend being to show that extensive microscopical change is present when little or no abnormality can be detected by the naked eye. The case just narrated, which may fairly be called one of malignant chorea, completes the requisite series of cases which go to prove the truth of the proposition with which this paper began—that clinically there are certain characteristics of rheumatic infection and its results, whether the infection be of joints, of heart, or of brain. These characteristics are—two extremes of severity, transient and malignant cases; and between these extremes a complete gradation of protracted cases, in which an imperfect resistance on the part of the infected organ or tissue leads to connective-tissue increase of a permanent and crippling nature. These protracted forms are punctuated by more or less frequent exacerbations.

The rest of this paper embodies a suggestion with some fragmentary evidence in its favour. The suggestion is this: that in many cases of rheumatic infection the organism persists in the infected tissue after all obviously inflammatory signs and symptoms have disappeared in a comparatively but not absolutely harmless state, capable of re-exaltation of virulence in favourable circumstances. The facts forming the basis of this proposition may be summed up as follows.

1. It is common to see a woman 35 years of age with mitral stenosis who has had rheumatic fever at 15 or 20 years of age without recurrence. The symptoms of cardiac disease begin some years after the arthritis. Necropsy shows extreme fibrosis of the mitral curtains. Now it is hardly likely that the rheumatic fever laid down, so to speak, a definite dose of fibrosis, the great increase of which is to be ascribed solely to the restlessness of the valves and the mechanical strain to which they are subjected. It is more satisfactory to postulate chronic irritation of the valves by organisms of lowered virulence persisting therein.

2. A case of the above nature sometimes blazes forth into a state of malignant endocarditis. This is usually ascribed to reinfection of previously scarred valves. The following case suggests rather that organisms persist in the fibrous valve and, under conditions lowering the patient's resistance, undergo exaltation of virulence with malignant results. A female, aged 20 years, who had had cardiac symptoms for 12 years, was admitted to St. Mary's Hospital under the care of Dr. Lees after a fortnight's illness. She had had rheumatism and chorea but not recently. Up to admission she was suckling her first child. She was very pale and weak. The physical signs were those of mitral stenosis, but her symptoms were graver than the signs and there was irregular pyrexia with wide daily excursions. The post-mortem examination showed infarcts of the lung, the spleen, and the kidneys, without suppuration; recent and old pericarditis slight in degree; old mitral stenosis with massive vegetations on mitral and aortic valves, chordæ tendineæ, and left auricular wall. These vegetations contained swarms of micrococci, apparently corresponding to the micrococcus rheumaticus as it is described by the authorities mentioned above.

3. Relapse is common in rheumatic fever, commoner even than in enteric fever, occurring in about 20 per cent. of all cases.[19]

4. Rheumatic affections tend also to recur at intervals too long to allow them to be called relapses. Thus, a youth, aged 19 years, with acute rheumatic arthritis and aortic incompetence, had had rheumatic fever when he was 12 years old and chorea a few months later. At 13 years of age he again had rheumatic fever and his heart was affected. At the ages of 14 and 16 years he had further attacks and several milder attacks between the ages of 16 and 19 years. If this kind of story be due to repeated reinfection it is without parallel (not excepting lobar pneumonia) among microbic diseases.

5. The prolonged course of chorea and of endo-pericarditis in childhood shows at any rate a persistence of rheumatic infection over a period of months. In the same connexion the case described earlier in this paper may be recalled where a patient was for two years almost continuously disabled by waxing and waning arthritis.

6. Analogy is a much-abused form of support for theories, but it seems legitimate to draw attention to the many infections which are capable, and often convicted, of latency—to name only a few, tuberculosis with its quiescent foci ready to flare up at a favourable opportunity, the extraordinary persistence of bacillus typhosus in bone lesions, of bacillus coli in the liver, gall-bladder, &c., of staphylococci in bone marrow, and so on. If all these organisms can remain latent, reasserting themselves as soon as they get the chance, why should the micrococcus rheumaticus be held to differ from them in this respect?

To summarise, clinical observation of rheumatic infection goes to show (1) a certain similarity of effect, whatever the tissue infected; (2) the capability of such infection to inflict any degree of damage on the tissues attacked, within certain limits (transience and malignancy); and (3) a tendency on the part of the infective agent to persist in the infected tissues.

In conclusion, I must express my thanks to Sir William Broadbent, Dr. Cheadle, Dr. Lees, and Dr. Phillips for permission to quote their cases, and to Dr. Broadbent, pathologist at St. Mary's Hospital, for post-mortem and bacteriological data.

St. Mary's Hospital, W.

RADIOSCOPIC AND RADIOGRAPHIC APPEARANCES IN PLEURISY,

WITH ESPECIAL REFERENCE TO THE UPPER LIMIT OF PLEURAL EFFUSION.

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Dry pleurisy.—The subject of pleurisy without effusion may be dismissed in a few words. During a period of three months every case which presented the characteristic signs of stabbing pain in the side, dry cough, and friction sounds on auscultation was examined by the radioscopic method, with the result that in only two of these cases was there any loss of clearness corresponding to the part affected. One of these, a case of left-sided pleurisy, was interesting for two reasons. In the first place, with the tube anteriorly a shadow was cast on the right side of the chest with a well-defined margin, concave above, proceeding downwards from the spine of the scapula to the junction of the eighth rib with the vertebral column. In the second place the diaphragm in maximum excursion only moved three-quarters of an inch on the affected side, while on the right side it moved one and seven-eighths of an inch. In quiet respiration the movement

[19] Church: "Acute Rheumatism," Allbutt's System, vol. iii

was five-eighths of an inch on the right side and three-eighths of an inch on the left.[1] The marked limitation of diaphragmatic movement on the left side was due to pain produced on taking a deep breath, the action being thus checked. On further examination the diagnosis of thickened pleura was reached. A history of right-sided pleurisy three weeks previously was obtained, but there were probably previous attacks to account for the thickening. Hence, on the whole, it is reasonable to conclude that acute pleurisy coming on for the first time when in the dry stage casts no shadow.

Pleurisy with effusion.—Appearances vary according to the amount of fluid contained in the pleural cavity at the time of examination. The patient should first be examined in a sitting posture with the tube posteriorly and the screen in front of the chest; then with the tube anteriorly and the screen on the back of the chest; next lying quite flat on his back on a canvas stretcher (or other form of support which will allow of the transmission of the Roentgen rays), under which the tube is placed; and finally, if necessary the patient can be examined lying on his abdomen or lying first on the right and then on the left side with the tube and screen on opposite sides of the thorax. The most useful skiagram is taken with the tube posteriorly and the plate against the anterior thoracic parietes, as this position shows best any displacement of the heart. The right and left lateral positions are of value in a difficult case in deciding between pleural effusion and a very dense and consolidated lung, for the upper limit of opacity will alter its position unless the effusion be loculated. In one case which was examined with the tube anteriorly, the man being seated, the whole of the lower part of the left side of the thorax was in shadow continuous with that of the diaphragm as far as a line slightly concave above extending in a direction downwards and outwards following closely the direction of the seventh rib. Since here I had not previously percussed or auscultated the chest, the diagnosis on the screen examination alone rested between thickened pleura and serous pleural effusion, the loss of transradiancy not being sufficiently great to obscure the rib outlines. On listening over the area in shadow voice and breath sounds were heard distinctly and the vocal fremitus was not diminished, so that pleural effusion was put out of court. The greatest difficulty in the discrimination of fluid in the chest is met with in children; here, therefore, radioscopy is of the greatest service. The chief points to note in conducting such an examination are:—(1) the height of the fluid on the affected side; (2) the contour of the upper margin of the fluid; (3) whether or not the outlines of the ribs can be distinguished; (4) the position of the heart; and (5) the movement of the diaphragm, if this be visible. In this condition I believe the screen to be of more value than the radiograph on account of the facility with which alteration in position of the pleural effusion on change of posture can be recognised.

The conclusions which I have arrived at by means of radioscopy are these: (1) That the level of the fluid changes with the position of the patient unless (*a*) the quantity of fluid be great and (*b*) the fluid be encysted by adhesions; (2) that a purulent effusion yields a shadow of greater density than a sero-fibrinous effusion; (3) that the shadow is homogeneous and in the case of serous effusion gradually increases in density from above downwards; (4) that, however far the heart be displaced to the right, in most cases little alteration takes place in the position of the apex relatively to the base; (5) that other conditions being equal the heart is displaced more when the effusion is left-sided; and (6) that a somewhat triangular shadow, not normally visible, above and continuous with the shadow of the heart and pericardium is cast by the mediastinum which is displaced by the lateral pressure towards the healthy side of the thorax.

In a communication made to the French Academy of Sciences Professor Bouchard[2] states that on radioscopic examination the translucency at the apex increases as the effusion becomes absorbed. In one case, however, he noted that although the effusion was obviously diminishing the opacity at the apex still remained. "This fact," he says, "caused me to suspect that consolidation had occurred at the apex of the affected lung. Percussion and auscultation confirmed this and revealed the presence of commencing infiltration hitherto masked by the effusion."

[1] For range of movement of the diaphragm in health, vide THE LANCET, June 27th, 1903, p. 1802.

[2] Bouchard: Comptes Rendus, tome cxxii., Dec. 7th, 1896.

Williams writes[3]: "The outline of the diaphragm is less defined, or obliterated altogether, according to the amount of fluid present, as are also some of the ribs in the upper portion of the affected side." The first half of the statement holds good but the latter half seems incomprehensible unless the word "upper" be a misprint for "lower." In every case of pleural effusion the outlines of some of the lower ribs are obscured, and if the effusion be dense enough they are obliterated. I have never seen a case in which the outlines of the upper ribs were obliterated unless the chest were full of fluid, in which case no detail can be made out at all.

In the classical researches of Damoiseau[4] we find the following: "Whenever the absolute dulness rises to the height of a horizontal plane, reaching as far as seven centimetres or thereabouts above the nipple, it is limited by a line which is almost level. Below this plane, on the other hand, it is always outlined by irregularly parabolic curves, less and less open, which form in the latest stage a demi-ellipse." This is stated by Damoiseau to be constant in all cases.

Osler says[5]: "It has long been known that when the patient is in the erect posture the upper line of dulness is not horizontal but is higher behind than it is in front, forming a parabola." In medium-sized effusions the line which marks the intersection of the plane of contact of lung and fluid with the chest wall "begins lowest behind, advances upward and forward in a letter-S curve to the axillary region, where it proceeds in a straight decline to the sternum" (Garland quoted by Osler[6]). If the exudation be larger in amount the curve becomes much flatter and almost horizontal. The dulness, although modified to some extent by the condition of the lung, approximately indicates the actual level of the fluid within the pleural cavity. But what do we find on radioscopic examination?

In a paper by Professor Bergonié and M. Carrière[7] careful notes are given of 11 cases of pleurisy with effusion. These I will briefly summarise in order to show coincidence or not of the upper level of the shadow with that of the dulness.

Right Pleural Effusions.

Case.	Upper margin of opacity.	Percussion dulness.
1	Horizontal.	No coincidence.
2	Concave above.	Upper margin of opacity five centimetres below level of percussion dulness.
3	"	Upper margin of opacity just below level of percussion dulness.
4	Concave above after tapping.	No coincidence.
5	Convex above.	Coincidence.

Left Pleural Effusions.

6	Horizontal.	No coincidence.
7	Convex above.	Coincidence.
8	"	"
9	No precise results.	—
10	Concave above.	Coincidence.

Double Pleural Effusions.

11	Right side horizontal; left side concave above.	No results stated.

Hence we see that in four of these the upper limits of percussion dulness and of shadow exactly coincided with each other, in two there was almost exact coincidence, in three there was no coincidence, and in two no results were stated.

In the majority of cases I think that the results on radioscopic examination correspond with those on percussion. Where they differ we have to seek for a cause. The explanation in some cases may be as follows. The lung is liable to become adherent by a portion of its surface to the chest wall. The level of the fluid being represented by a straight line, the lung dipping into it may be represented by a curve with its

[3] Williams: Boston Medical and Surgical Journal, Oct. 1st, 1896.

[4] Damoiseau: "Epanchements Pleurétiques," Archives Générales de Médecine, October, 1845.

[5] Osler: Principles and Practice of Medicine, 1901, p. 669.

[6] Ibid., p. 669.

[7] Bergonié and Carrière: Archives d'Electricité Médicale, July 15th, 1896.

convexity below. Hence the thin layer of fluid and the air-containing lung, opposite to where the lung dips into the fluid, will be seen radioscopically as a lighter and more transradiant area, convex below, whereas at the sides where only fluid is present and no lung the shadow will be much more dense. Hence adhesions probably account in some cases for the lack of coincidence. In sero-fibrinous effusions the shadow increases from above downwards and thus corresponds to the increasing dulness of the percussion note over the same area.

Among the deductions drawn by Bergonié and Carrière in the paper referred to above is found the following: "When the upper surface of the liquid presents, both to percussion and to the fluoroscope, the classic curve of Damoiseau we may be sure that the convex part corresponds to a hyperæmic or atelectatic area, for if we make the patient cough violently or take four or five deep inspirations we may see that the surface becomes horizontal instead of convex."[8] This deduction appears to me to be questionable. In the first place, I deny that a hyperæmic lung gives a shadow of the same density as one which is in a state of collapse. A lung in a condition of apneumatosis or acquired atelectasis gives a shadow of corresponding density to one which is the subject of fœtal atelectasis where the lung has never been inflated. A radiograph of a fœtus which has never breathed shows that the lungs exhibit the same loss of transradiancy as the rest of the tissues of the body with the exception of the bones. This condition is unlike that of the hyperæmic lung, in which case it is doubtful whether a shadow be thrown at all (*vide* Hugh Walsham's[9] experiments with washed lungs). The surface of the fluid naturally becomes more horizontal on deep inspiration owing to increase in the intrathoracic pressure; why the convex part should be thought to correspond to a hyperæmic or atelectatic portion of the lung does not seem obvious. Between the upper limit of the effusion and the spine there is often seen a faint shadow somewhat oval in outline. This corresponds to the compressed lung, which appears denser than that on the opposite side, but not completely airless. My own experience coincides with the observations of Walsham[10] and Williams,[11] which show that oftentimes the lung is compressed on the inner side of an effusion with a sickle shaped edge.

Much more work still remains to be done on this subject and the few brief preceding notes do not pretend to be anything in the nature of an exhaustive survey of the subject.

As regards the diagnosis between sero-fibrinous effusions and empyema, by the difference in the density of their shadows, the evidence of various observers is to a certain extent contradictory. With respect to this I will confine myself to facts which I have noted. If a large drop from a serous effusion and another of equal size from a purulent effusion be placed upon a radiographic plate the skiagram will show the shadow of the pus to be the denser of the two. A similar result will be obtained by radiographing two test-tubes, side by side, filled each with an equal amount of serous and purulent effusion respectively—the shadow of the glass being equal in each case; the pus gives a shadow almost as dark as that of bone of equal calibre. This corresponds with what we would expect were we to compare the density of the two fluids, since, volume for volume, the pus contains a much greater proportion of solid material in the form of dead leucocytes and débris than does the serous fluid.

In all cases which I have seen up to the present time serous effusion throws a light shadow usually with a well-defined curved upper margin; a purulent effusion throws a dense or even opaque uniform shadow. In the former case the rib outlines are not obliterated, in the latter they most frequently are. These results have been verified by subsequent tapping. Pleural effusion can be distinguished, unless too great in amount, from thickening of the pleura by the change in the level of the upper margin on movement. Hence, by the aid of the Roentgen rays we are often able to determine whether fluid be present in the chest or not and, if present, from the density of the shadow to arrive at a conclusion as to the nature of the exudate.

Ventnor.

[8] Ibid., quoted in Archives of the Roentgen Ray, 1900, p. 67.
[9] Walsham: Transactions of the British Congress on Tuberculosis, 1901, vol. iii.
[10] Walsham: Brit. Med. Journ., July 6th, 1901.
[11] Williams: Boston Medical and Surgical Journal, Oct. 1st, 1898.

CHOLECYSTOTOMY FOR ACUTE POST ENTERIC INFECTION OF THE BILE CHANNELS; RECOVERY; DEMONSTRATION OF THE PRESENCE OF THE BACILLUS TYPHOSUS.

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ONE of us (J. L. T.) saw a man, aged 40 years, in consultation with Mr. J. Morgan Evans, of Llandrindod Wells, on August 21st, 1903. The history of the illness was briefly as follows. The patient contracted fever whilst in Paris and the first symptoms of the disease showed themselves on the night he left Vienna for Lucerne (June 29th) where he took to his bed on arrival and was laid up for five weeks under Dr. Siegfried Stocker. As soon as he was allowed to travel he hurried off to Llandrindod Wells on account of a former experience of the good effects of the water and climate upon him. The temperature chart he had with him showed the ordinary course of enteric fever. He arrived at Llandrindod Wells on August 15th and three days later he complained of pain and discomfort on the right side of the abdomen. Mr. Morgan Evans was called in on the 16th and found the temperature raised and a diffused tenderness over the ascending colon. These symptoms increased in severity and the tenderness became more definitely localised towards the hepatic flexure of the colon. When the patient was seen in consultation at 10 A.M. on the 21st the symptoms were slight cholæmia, raised temperature, and exquisite tenderness over the right hypochondriac region, with a maximum point over the area of the gall-bladder. On percussion the lower border of the hepatic dulness showed evidence of a probable distension of the gall-bladder which was mapped out on the skin. After consultation the patient refused our advice of having an operation performed but in about six hours he changed his mind owing to the increasing severity of his symptoms and when I (J. L. T.) percussed his abdomen again the dulness had increased an inch downwards and inwards towards the umbilicus, leaving no doubt practically as to the nature of the swelling. The rapid distension of the gall-bladder is worthy of comment, as we found three hours later when the operation was performed that the dulness had again increased at least half an inch during that time. I have never seen such an extraordinarily rapid distension of the gall bladder in other cases of infective cholecystitis, although I have had one case of infection by the streptococcus longus alone and another one which terminated in gangrene of the gall-bladder walls, as well as many other cases of a mixed infection in calculous cholecystitis. Rupture of the gall-bladder would have taken place before long had the operation been delayed.

Operation was performed on August 21st at 6 P.M. Dr. J. Murray anæsthetised the patient with ether after giving a hypodermic injection of strychnine and digitalin to counteract the post-enteric feebleness of the heart's action and Mr. Morgan Evans assisted me at the operation. A little clear fluid was found in the abdominal cavity and the gall-bladder was distended to the size of a hen's egg and projected well below the free edge of the liver. Its walls were very tense, the peritoneal aspect was glistening, and one could see a few white flakes in the clear fluid inside and one white patch could be seen on the mucous membrane near the fundus of the gall-bladder which was probably ulcerative in character and indicative of a threatening perforation. The tension of the gall-bladder wall was relieved by aspiration and afterwards a purse-string suture was placed in its walls and a piece of firm indiarubber tubing was inserted through an incision and the purse-string tied round it; a second suture was placed round the gall bladder and the drainage-tube on the proximal side of the purse-string in order to safeguard against leakage through the puncture holes of the

needle in introducing the purse-string suture. It is always safer to apply the second ligature round a purse-string suture for retaining drainage-tubes in all cases where the walls are very thin and the difficulty of avoiding puncturing the mucous membrane is insurmountable. The same difficulty is found in draining cases of acute distension of the intestine; in this manner with a rubber drainage-tube (as was done and introduced by the late Mr. Greig Smith of Bristol) and a second ligature there is a like benefit in these cases. It is almost impossible not to contaminate the field of operation in cases of acute distension of the gall bladder unless the tension is greatly reduced before the introduction of the purse-string suture; as soon as one can get a fold of the walls between the fingers then the cause of one's greatest anxiety is over. When circumstances allow I always push into the portion of rubber drain which is inserted into the gall-bladder a short Kocher's glass drain, for the reasons that that portion of the tube is rendered rigid and non-collapsable and consequently is introduced more easily, but more especially on account of the fact that one can tighten quickly and forcibly the purse-string suture without any fear or danger of causing kinking or occlusion of the rubber drainage-tube. The character of the fluid removed from the gall-bladder is worthy of remark in connexion with the probable route of infection of the gall-bladder. The fluid from the fundus was practically transparent and limpid, but the last portion which came from the deepest part in the vicinity of, and perhaps from, the cystic duct was milky and was immediately followed by bile-coloured fluid with a peculiar weak nauseating smell.

After the operation the patient passed a very good night and all his pain and tenderness immediately left him. Six days later the drainage-tube was removed and two small calculi of recent origin were removed from the cystic duct. The discharge from the gall-bladder was very copious at first and was also very irritating to the skin; a crop of umbilicated pustules formed all round the wound for about a distance of three inches. The non-pustular area was dressed with iodoform gauze, whilst the pustular area was at the junction of the double cyanide dressing with the iodoform gauze. By altering the dressings and by the application of topical treatment to each pustule the further treatment of the case was satisfactory. A week after the operation all traces of jaundice had disappeared and Dr. Cobleigh of Kingston, Pennsylvania, U.S.A., who had previously known the patient, stated that his eyes were clearer than they had been for nearly two years as the patient normally was of a "livery" disposition.

Cases of post-enteric infection of the gall-bladder which come under the hands of the surgeon are comparatively few as the treatment and the recognition of such cases are of quite recent date. The routes of infection are three: (1) the blood, when we must assume a *locus resistentiæ minoris* of the infected part; (2) transperitoneal; and (3) direct continuity by advance from the duodenum. The character of the fluid in this particular case showed more advanced changes in the portion coming from the cystic duct and would probably point to infection by direct continuity.

From post mortem records of cases of typhoid fever the occurrence of a specific infection of the gall-bladder is seen to be fairly common, and this fact, coupled with the records that exist of the isolation of the typhoid bacillus from the blood, urine, and sputum during life, shows that there is a definite systemic infection in a certain number of cases of typhoid fever. The bile, and therefore the bile in the gall-bladder, may be expected to show a similar infection. James Stewart,[1] in an interesting report on 620 cases of typhoid fever from the Royal Victoria Hospital, Montreal, stated that in his experience the complication of cholecystitis occurred but seven times and all recovered except one. Of the seven cases three were operated on and all had calculi and yielded the typhoid bacillus in pure culture. All these were cases occurring during the disease, but they can hardly be the only ones in which infection of the gall-bladder took place. In fact, a post-typhoidal cholecystitis has been recorded seven,[2] 15,[3] and 17[4] years after the original attack of fever, showing that the typhoid bacillus may be latent for a considerable time without giving rise to local symptoms. How far the presence of gall-stones before a specific infection, or as a result of such infection, determines the onset of an acute cholecystitis it is not easy to say, though the majority of cases operated on for post-typhoidal cholecystitis contain calculi in the gall-bladder. The probability is that the incidence of cholecystitis during or after an attack of typhoid fever will depend on purely local conditions and such will determine the time of onset. In our case the onset was just after convalescence. The infection was not a pure infection, the bacillus typhosus and the bacillus coli communis being both present. The typhoid strain isolated fulfilled all the cultural characteristics of the specific organism, as well as in its morphology (flagella). The blood serum of the patient agglutinated the organism to the same degree as it agglutinated the laboratory stock culture of typhoid bacillus and the organism behaved in the same manner towards the blood serum of other cases of typhoid fever. The bacillus coli was also typical in all respects.

In conclusion, I (J. L. T.) may be allowed to express my admiration at the prompt manner in which a room was converted into a model operation theatre by covering carpets and everything with sterilised white bed-sheets, at the careful way the ether was given by Dr. Murray, and, lastly, the plucky manner in which Mr Morgan Evans threw the entire responsibility of further delay upon the patient and his friends.

[1] Brit. Med. Jour., June, 1901.
[2] Buschke: Deutsche Chirurgie, 1897.
[3] Von Dungern: Münchener Medicinische Wochenschrift, 1897
[4] Droba: Wiener Klinische Wochenschrift, 1899, p. 1141.

SOME IMPRESSIONS OF SALSOMAGGIORE AND ITS BATHS.

BY W. W. BALDWIN, M.D.

SALSOMAGGIORE is an old acquaintance among the spas of Italy. My first visit there was made in the summer of 1884 in behalf of certain patients. It was no Lombard paradise in those days. One drove nine miles from San Donnino in billowy clouds of grey dust to be set down at last in a rather squalid, dilapidated village, swarming with flies and fleas and haunted, like Constantinople, by mongrel dogs. The few hotels were fairly good and comfortable, although primitive and simple. The country side was charming and the drives were most beautifully picturesque, although the dust still persistently surrounded one upon every movement. No doubt the country wine, which was liberally supplied without extra charge at meals, owed something of its acrid, gritty quality to the all-pervading surface powder, ground by traffic out of the smooth, hard, well-kept roads. This wine was the most active diuretic my professional experience has ever encountered, a quality that doubtless explains the avidity with which the male population seemed eagerly to haunt the convenient open places provided as urinals upon every corner. Northern visitors were much annoyed at first, to say the least, by this novel feature of Italian towns. But by-and-by they ignored, as far as possible, what was unwelcome by observing more and more attentively things of artistic beauty and charm which fill the eye and stimulate the imagination upon every hand in adorable old Italy.

Notwithstanding these rather serious drawbacks to holiday humour a certain delightful hospitality and cordial coöperation to assist my purpose of study shown me by the Italian physicians then in charge of the baths make my memory of that ten days' visit a very pleasant one. I was also impressed by the dignified simplicity of our Italian *confrères* and the serious thoroughness which they displayed in their work. This also contributed to render my visit profitable as well as delightful.

From this time during active professional life in Florence until 1898, when I went to Rome, I continued to send patients to Salsomaggiore with growing confidence and satisfaction. I found that not only brilliant curative results were generally obtained in appropriate cases but that a certain proportion of these patients were permanently cured. It was also clearly noted that failures were more frequently due to mistakes in judgment as to indications than to any lack of therapeutic power in the treatment itself. In general experience taught me that acute inflammations were almost invariably aggravated by these baths and applications, but subacute inflammatory conditions and post-inflammatory adhesions and deposits were usually benefited or removed whatever the exciting cause. Thus the objection that these waters are prescribed for too great a variety of diseases may be met with the statement that their curative scope and

value lie chiefly in the treatment of the results of inflammation following so many diseases or diseased conditions.

In my practice one rarely meets with those tuberculous and tertiary specific lesions such as suppurating glands, open joint and bone abscesses, gummata, &c. These dreadful scourges of the ill nourished poor from damp, sunless, insanitary dwellings will require a separate discussion, and upon another occasion I purpose to publish an account of several hundred cases of this kind that came for treatment to my summer clinic in the Apennines in the summers of 1893 and 1895. Some of the worst of these cases were sent to Salsomaggiore for treatment by the village and town communes, assisted by generous private charity. It is worth remarking that some of the cures were extraordinarily brilliant and successful and many of those poor patients were restored to useful work-a-day life.

The only method of inhalation employed at Salsomaggiore during this time was the direct spray which was, however, so efficacious in chronic catarrhal and other affections of the upper air passages that I have continued to prescribe the "acqua madre"[1] of various strengths in private practice ever since with great success. This water, bottled and numbered according to strength, can be purchased at any pharmacy in Italy, and elsewhere if ordered, and by means of a suitable steam atomiser it may be inhaled at home with almost as much benefit, I believe, as at headquarters. I am also convinced that this procedure as claimed at Salsomaggiore does, in large measure, prevent the more or less frequent acute catarrhal attacks some months after the treatment.

Upon reviewing my notes from 1883 to 1898, during active professional work in Florence, I find three classes of cases recorded as having been treated at Salsomaggiore: (1) chronic arthritis of gouty, rheumatic, or gonorrhœal origin, muscular rheumatism, and rheumatoid arthritis; (2) various gynæcological ailments in chronic stage, such as endometritis, parametritis, and perimetritis, pelvic peritonitis, pelvic cellulitis, &c., certain cases of salpingitis, ovaritis, &c., functional derangements such as amenorrhœa, menorrhagia, dysmenorrhœa, suppressed or irregular menstruation due to various conditions of general debility or retarded development, and several cases of uterine myo-fibroma, accompanied by more or less menorrhagia; and (3) various chronic affections of the upper air passages such as naso-pharyngeal catarrh, bronchial catarrh of the larger tubes, &c.

In the first class I remarked, in almost every case, not only satisfactory improvement in the local condition but also great gain in the general health. Some patients who had been more or less crippled were restored to greater activity and others, by means of supplementary treatment with massage, electricity, &c., during the colder months at home, were relieved of former disabilities and gradually cured. I noted, however, that results in muscular rheumatism and rheumatoid arthritis were not generally so favourable and was led to adopt other treatment for some of these cases. In the second class of cases some very remarkable cures were noted and in general it might be said that not only was the proportion of permanent cures far greater than by any other treatment but relief was obtained in almost every case. Several cases of sterility were cured, one of which is sufficiently instructive to be reported.

A strong, well-developed, healthy young woman who during the first year of married life had a miscarriage due to accident, suffered over seven years previously from endometritis, dysmenorrhœa, profuse leucorrhœa, and general ill-health. For maternal and family reasons she was most anxious to have a child. She had undergone various kinds of treatment, including several operations such as curettage, mechanical dilatation, &c. She went to Salsomaggiore in the summer of 1890 by my advice, where the treatment consisted of baths and irrigations with "acqua madre." She returned to Florence much improved in every way. During the following winter she continued the douches with "acqua madre" and went to Salsomaggiore again the following summer. After the second course it was noted that not only was the local trouble comparatively well but that her general health was excellent. In the winter of 1891-92 she became pregnant and in due time, after an easy labour, gave birth to a healthy male child. Since then she has had two other children and remains in excellent health.

[1] Literally "mother water," the concentrated liquor that remains after evaporation of the iodo-bromo saline water to remove common salt.

Treatment of the third class of cases by means of inhalations (and baths where there was a gouty or rheumatic background) was also signally successful. Indeed, I was led by-and-by, as experience grew, confidently to expect a larger proportion of cures in these cases at Salsomaggiore than by any other method I have ever known. Regarding my few cases of uterine myo-fibroma treated at Salsomaggiore, I did not record very definite results and do not consider my limited experience as warranting any conclusions.

Upon this basis of assured and approved therapeutic value an enterprising commercial company invested a large capital in truly admirable improvements, which were begun in 1899 and rapidly pushed towards completion, at the same time advertising the place so extensively in the Old and New World that Salsomaggiore and its wonderful curative properties have been ever since a topic of the time. As a result it has had a great American boom and a large contingent of foreign patients have been attracted to this modern Pool of Bethesda. It must be confessed, however, that, as is usual in such circumstances of artificially stimulated interest and excitement, the spa has been magnified into a universal panacea for every earthly ill and many unsuitable cases have gone in the vain hope to be healed. But the scientific conscience and accuracy have latterly evolved order out of the inevitable early confusion of such an extensive undertaking and at present greater care is exercised to avoid mistakes and to select only such patients as are susceptible of cure by this treatment.

Wholesale exploitation of human misery and credulity still remains a monopoly of the various money-making delusions. This fever of expectation upon every hand has interfered with the ordinary prosperous pursuit of healing and rendered it necessary to lay down the law most decidedly to some patients regarding the indications and limitations of treatment at Salsomaggiore. Indeed, one of the trials of a physician's life lies in the almost invincible difficulty of teaching primitive ideas of hygiene and of inducing obedience to simple natural laws. Certain patients are eager consumers of drugs and they throng the various spas in lively expectation not only that results of past social dissipation will be cured but that they may also thus obtain assurance for future license. As apostles of the truth we can only preach of nature's certain and remorseless revenge for all such self-indulgence and clearly show that no medical treatment, however skilful, can ever take the place of "physical righteousness."

Owing to important consultations I had been unable to visit Salsomaggiore since its renaissance until October, 1902, and again in August, 1903, to inspect the widely-heralded improvements. I was also anxious to investigate the claim that this treatment should be extended to a much wider range of diseases and diseased conditions than had been formerly contemplated and to obtain at headquarters in present circumstances more exact knowledge regarding indications and contra-indications to the treatment than had hitherto been published. Certain untoward accidents had also occurred in cases ill suited to those powerful baths or where the treatment had probably been pushed too rapidly. At the same time it seemed a favourable opportunity to discuss the wisdom of giving so much shorter courses of treatment here and in the other watering places of Italy than is the universal rule in the older northern spas of Germany, France, and elsewhere. For the purpose of making these and other inquiries I interviewed the various Italian specialists in charge of the baths. It is very pleasant to record again the charming courtesy and delightful kindness of our Italian colleagues; not only were all doors opened wide at my request but unwearied pains were taken at all times and seasons to demonstrate, to instruct, and to explain every detail connected with thorough and painstaking work. My questions were answered so fully and cheerfully that one seemed to be conferring rather than receiving favours. I was assured that great precaution had been taken to prevent accidents in future and to insure general safety in all respects. But of this later. The changes since my first visit were amazing; not only had the old hotels been rebuilt and regenerated as regards comfort and sanitation, but I found a large modern hotel upon a commanding site. This hotel is one of the best of its kind in any spa. Its situation at the junction of two valleys gives it free ventilation and for this reason the nights were fresh and cool in spite of the heat which prevails in Lombardy during the months of July and August. This

hotel has provided baths upon every floor for patients who are unable to leave the house. There were two new baths, one of which, the Magnaghi, is a model of its kind, furnished with every modern balneological equipment, including a complete medical electrical installation. The village, although still leaving something to be desired by way of cleanliness, was undergoing the same transformation as the baths and hotels. Many of the objectionable open convenient places had been replaced by decent covered iron structures (the same may be said of all the large towns in Italy). The fleas and flies were less numerous and the dogs had almost disappeared. The dust was laid by frequent street sprinkling and although there were much débris and confusion here and there incident to rapid growth in building one could imagine a near future when this watering place will become one of the best and most complete of its kind. So much in commendation of the work already accomplished and still in process of completion.

For particulars of the chemical analysis of the waters, description of the baths, &c., as well as the original discovery of the presence of organic iodine and sulphur compounds in the inhalation rooms and other important observations, I must refer to the admirable and exhaustive report of THE LANCET Special Analytical and Sanitary Commission on the Iodo-bromo Saline Waters of Salsomaggiore.[1]

It is obviously of the greatest importance not only that physicians should have expert knowledge of balneology in general but also that they should have clear and definite ideas regarding indications and contra-indications to treatment in those most potent available baths of their kind in the world. Just in proportion to the undoubted efficacy of this treatment in appropriate cases must its power for harm and even disaster be when it is rashly or injudiciously administered. The following are some contra-indications to the treatment at Salsomaggiore.

1. Patients who have at best but a meagre pittance of reserve vital force to draw upon in case of emergency should not take the full baths.

2. Where the excessive metabolism induced would throw a dangerous or even fatal burden of overwork upon organically diseased excretory organs, as in Bright's disease.

3. In advanced arterial fibrosis or atheroma, especially if asymmetrical, these baths might initiate more rapid degenerative changes and even produce fatal accidents by causing excessive vaso-dilatation on the one hand and through reflex action slower more powerful cardiac contraction on the other. Thus the more inelastic vessels would bear the brunt of impact and either give way, as in apoplexy, or be strained and damaged, anticipating the slower advance of senile degenerative changes by many years as has occurred in several cases. Dr. Zoia claims that degenerative diseases of the aorta and carotids of syphilitic origin derive much benefit from these baths except when there is constant high arterial tension. He never prescribes them, however, in such cases at a higher temperature than from 33° to 34° C.

4. In any case where, owing to vital depression from any cause, reparative processes cannot keep pace with the tissue waste induced by this treatment.

5. In advanced organic heart disease, almost without exception, these baths are too powerful—at least, they should not be prescribed in such cases until more accurate and exhaustive studies have been made regarding their effects upon blood pressure, &c. I do not believe, however, that they can ever replace the Schott-Nauheim treatment for chronic heart diseases. While well-compensated valvular cardiac lesions without degenerative changes in the myocardium might not contra-indicate the treatment when necessary for other conditions, nevertheless, in these circumstances, the temperature of the baths should never exceed 34° C.

6. Certain patients with irritable skins cannot take these baths without suffering from dermatitis, eczema, &c. In a certain proportion of these cases Professor Baistrocchi has called attention to the fact that "acqua madre" baths, diluted with sterilised sweet water, are not only well borne but that they frequently act most favourably upon such conditions of the skin.

7. Patients who have tuberculosis of the lungs and intestines are not allowed to take the treatment at Salsomaggiore on account of the danger of importing infection. It has been proposed to treat this class of cases at some distance where the waters are analogous although not as strong.

8. When the baths cause debility, insomnia, and nervous irritability which do not improve under the milder, slower course of treatment, or by substituting the more sedative baths of diluted "acqua madre" (Baistrocchi), the treatment should be interrupted or suspended. I believe that a continuance of these symptoms forbids the treatment, certainly at the time, and I do not believe that any future good can be predicted which would warrant such lowering of present vital force, notwithstanding traditions to the contrary in various watering places.

9. Acute inflammatory conditions, such as gout, rheumatism, parametritis and perimetritis, &c., would certainly forbid these baths. I am aware that there are occasional exceptions to this rule, but who can distinguish them in given cases? These exceptions therefore must be regarded as fortunate accidents rather than encouragement to rashness. Acute rheumatic and gouty attacks in joints, if inevitable, are most satisfactorily located for rational and successful treatment, but formidable explosions in the brain, heart, and other vital organs have been caused by attempts to abort these diseases by means of powerful saline baths. There is good reason for the popular belief in "the great danger of driving these diseases in."

10. Latterly cases of nervous prostration, neurasthenia, hysteria, and other nervous maladies, with or without anæmia, have been treated at Salsomaggiore with more or less success. But we have not been instructed at headquarters as to what class of these cases are appropriate for treatment. Surely we have more rational and hopeful methods of treating the various nervous disorders, resulting from our terrific modern life, with its inhuman discord, intolerable tension, worry, and dissipation of vital force, than by those incalculably searching iodo-bromo saline waters. Where these conditions, however, follow the various specific inflammatory disorders, by removing the cause we may hope to cure the symptoms as well. "Cases of cerebral exhaustion following overwork in gouty or rheumatic subjects have been rapidly benefited by these baths, when the temperature does not exceed 33° or 34° C. Hot baths in these cases cause insomnia and cool baths relieve it" (Zoia).

11. Primary anæmia and chloro-anæmia are, I believe, more successfully treated at ferruginous springs, such as Schwalbach, Spa, &c., or by the arsenical iron waters of Levico, Roncegno, Bourboulle, &c., but where the anæmia has been caused by certain of the inflammatory conditions mentioned Salsomaggiore by curing the one frequently removes the other. Where anæmia is a complicating factor and not the result, or when it is more profound than usual, a so-called after-cure is indicated at one of the iron or arsenical iron springs. In some cases the tonic treatment should precede the iodo-bromo saline baths. In cases adapted to this treatment, however, the accompanying anæmia is usually much benefited, the hæmoglobin and red blood corpuscles increasing very rapidly. There are certain unfortunate victims of hereditary tuberculous or syphilitic taint who are never very well and strong. They suffer from anæmia, swollen glands, various eye troubles, chronic naso-pharyngeal and bronchial catarrh, &c. They have dry inelastic skins, defective teeth, and having passed the storms and perils of infancy and childhood often show unmistakeable signs of former rachitis. They have small power of resistance and fall easy prey to acute infectious diseases from which convalescence is prolonged. They may have escaped definite attacks of the family disease because they have been better housed, better fed, and better clothed than their poorer neighbours, and have always been under skilful medical supervision. For this class of patients the treatment at Salsomaggiore is very successful, not only for the subacute and chronic stages of intercurrent maladies, but also for the constitutional vice of defective blood and tissue building.

12. Persistent high arterial tension, due to autotoxæmia, would demand great caution in the employment of these baths. Should they continue to lower the tension after cautious trial the treatment might be beneficial, but where the tension is not influenced or even raised the treatment should be discontinued at once and other measures taken to relieve this dangerous condition. Of course, when the kidneys are also incompetent the treatment should never be given. Aneurysm would always forbid the treatment.

The average duration of the course of baths is three weeks. This statement is published in official announcements, as well as in various special papers devoted to the discussion of Salsomaggiore and its treatment. Not only is this course far too short to obtain full benefit but experience, even in the milder baths, has taught that only harm can result from

[1] THE LANCET, July 12th, 1902, p. 94.

pushing the treatment too rapidly. It is the almost universal rule in the older northern spas, where the science of modern balneology has been gradually evolved from centuries of experience and study, that in the beginning of a course of baths it is rarely prudent to give them oftener than every other day. After careful study of the peculiarities and idiosyncrasies of a particular case, observing the behaviour of the excretory organs and blood as well as the nervous system (through frequent chemical analysis, &c.), two and even three baths are given upon succeeding days but rarely more without a day's pause between. The duration of the first bath is rarely longer than from seven to ten minutes at a temperature of 35° C. The strength of the bath solution is slowly and carefully augmented and the duration increased one minute every or every other bath. Except in the Schott-Nauheim baths, which are gradually cooled for a specific purpose, the bath temperature is gradually raised ½° to 2° C. every or every other bath according to the behaviour of the blood pressure which is carefully measured. Thus a course of 21 baths would last 30 or more days, but never 21 days as is advertised at Salsomaggiore.

I have had occasion to study the bath cards of various patients who have consulted me after their course of treatment at Salsomaggiore and to my amazement have found in certain cases that from 21 to 30 baths had been given in as many days. One patient had taken 25 baths in 26 days. His daily programme was massage, local application of the hot fango (mud) bath, and inhalation. The duration of the first bath was 20 minutes at a temperature of 35° C., and that of the last bath was 35 minutes at a temperature of 39° C. He had been very much pulled down by this treatment but he was assured that great benefit would ensue later. The promised general improvement, however, was very slow to appear and the local trouble for which he took the treatment was not relieved. Another patient took 17 baths and inhalations in 18 days. He undertook the treatment for so-called gouty pains of a vague and fugitive character. He had arterial fibrosis with a rather constant high blood pressure (140 to 160 millimetres of mercury). "The kidneys were not markedly diseased, although they had latterly lagged in their excretory functions." As might have been expected, this patient has not been as well since his treatment at Salsomaggiore, although he had previously been in fairly good health. Degenerative changes in the arteries had been accelerated and the kidneys gave grave cause for anxiety.

These cases will suffice to emphasise my contention regarding this matter. I am happy to say that not only were these and other criticisms favourably received by my Italian *confrères*, but measures had already been taken towards reform as regards northern patients. Italian invalids unfortunately lack the patience and pertinacity to undergo slower, longer courses of treatment. This is undoubtedly the cause of such an anomalous state of affairs in Italy. I was informed upon all sides that those patients who had taken the slower, milder courses of treatment were not only better satisfied with results but were more certain to return for another course.

Professor Baistrocchi, director of the sanatorium at Salsomaggiore, has introduced admirable sanitary reforms into the various establishments which have been in operation several years—viz., (*a*) disinfection of the bath tubs after each bath by means of creoline solution and corrosive sublimate when necessary; (*b*) careful disinfection of the walls, floors, and furniture by means of corrosive sublimate spray; (*c*) most careful disinfection of all apparatus used in the baths and inhalation rooms by means of corrosive sublimate and dry heat; (*d*) spittoons filled with solution of corrosive sublimate for patients and attendants; (*e*) convenient receptacles containing corrosive sublimate for disinfecting the hands, &c.; (*f*) various apparatus for sterilising all sweet water and "acqua madre" employed in the baths and all solution used for inhalation, as well as the mud for local applications and the various receptacles; (*g*) a thorough system of ventilation for bathrooms, inhalation rooms, &c.; and (*h*) most admirable methods of cleaning, disinfecting, and sterilising all linen used in the establishments, including separate protected rooms for handling soiled and surgically clean linen as well as separate receptacles for conveying the same to and fro. The rooms where the clean sterilised linen is washed and stored are most carefully disinfected and the servants employed for the work are required to observe such precautions as disinfection of the hands, clothing, &c. During more than 20 years' study of balneology at various watering places in Europe and America I have never seen such sweeping and radical sanitary measures employed elsewhere. But servants are not infallible and it seems not unreasonable to suggest in order to render this excellent system more perfect that all patients with open tuberculous lesions and all syphilitic cases whatsoever should have separate sections not only to protect those having the same disease from infection by the other but also to avoid any possible danger to the other patients. This imperative precaution has been recently adopted at the Magnaghi and doubtless will be introduced into the other establishments during the coming season. Not only is the drainage of the various hotels and establishments equal to modern sanitary requirements but frequent flushing of the waste pipes with the bath water, which is a disinfectant, provides an additional safeguard against infection.

In answer to my criticism that strict rules regarding rest after the baths and applications had not been generally enforced in Salsomaggiore, Dr. Zoia informed me that he always insisted upon an hour's rest in bed immediately after each bath, and he hoped that this wise measure would be made obligatory. He also informed me that private rooms had recently been provided for the purpose at the Magnaghi establishment. Professor Baistrocchi has also published rules regarding rest after the treatment, particularly after the inhalations. The Italian Government with wise liberality permits all physicians with unexceptionable qualifications, of whatever nationality, to practise in Italy. No doubt the great army of strangers who come every year to visit her monuments of history and works of art, contributing a vast annual income to promote general prosperity, is the direct cause of this enlightened policy. In Salsomaggiore, however, certain restrictions have been introduced upon Professor Baistrocchi's initiative—viz., the so-called "Tessera" or official permission to take treatment. As this measure has caused much discussion and some heart-burning it merits a word of explanation. Only the physicians who compose the medical council have the right to issue the "Tessera" to their own and other patients after careful examination. Considering the very powerful character of the baths and the disasters that might occur through mistakes in prescribing the same, this supervision is prudent and justifiable. Of course such powers should be exercised only by well-qualified specialists with judicious impartiality. I have no doubt, however, that the matter will be satisfactorily adjusted. In view of the great value of massage and Swedish gymnastics as adjuncts to the treatment it is to be hoped that the same liberality will be extended in future towards these trained attendants as in other directions.

It must be said, in simple justice, notwithstanding the fact that these establishments have not yet paid dividends upon the large capital invested, and cannot do so at best for a long time to come, the directors have displayed liberality in promptly carrying out the numerous expensive improvements suggested by the medical council, including an abundant supply of pure and wholesome mountain water for establishments, hotels, and the town. When there is no longer room for criticism in human undertakings the millennium will have dawned. Until then our aim must ever be towards perfection. A writer makes the rather hazardous assertion that no particular regulation of the diet is necessary for those who take the treatment at Salsomaggiore. Professor Riva, however, in his illuminating paper on Subacute and Chronic Arthritis and the Waters of Salsomaggiore, emphasises the paramount importance of rigorously supervising the diet of patients taking the treatment. This he calls "dieto terapeutica," and in conclusion says: "It is so because it is so, and any cure conducted according to the demands of modern medicine cannot and dare not neglect the diet, which must always be regulated in the most careful and scientific manner. Professor Baistrocchi is equally imperative as to the necessity for carefully regulating the diet according to the requirements of each particular class of disease. He has also published a series of diet tables for patients at the sanatorium. The importance of diet in health and disease has been known since the dawn of history and doubtless was practically recognised by mankind before they invented oral and written language. Even the lower animals have wholesome instincts regarding the quality and quantity of food suitable to their condition.

I cannot refrain from expressing my appreciation of the admirable sanatorium and the excellent scientific work accomplished by Professor Baistrocchi and his well-trained

assistants. The same thorough disinfection, ventilation, and cleanliness are observed here as in the bath establishments. The "luoghi commodi" (convenient places) have been constructed outside the main building but communicate with it by means of well-ventilated covered passages. These closets are furnished with every modern sanitary safeguard. The food is simple but of the best quality and is furnished even to the poorer patients in great abundance. The soup, which I tried upon Professor Baistrocchi's recommendation, was most savoury and nutritious. The curative results accomplished in the sanatorium, chiefly in scrofulous and gynæcological maladies have been so brilliant that they merit more careful study and discussion. These poor patients have supplementary treatment by massage, electricity, medical gymnastics, &c., when necessary.

Patients care little for the why and wherefore of curative results, passionately desiring to be healed of their infirmities, with as much amusement as may be during the process. They never rise above empiricism and only glorify results, which is natural and commendable. But we must solve, if possible, the difficult problem of the *modus operandi* of these complex remedies upon infinitely more complicated organisms. In no other way can we hope to prescribe them with absolute confidence in all cases and in all circumstances. Upon the threshold of this investigation we must acknowledge that chemistry has hitherto failed to give us a complete explanation of the favourable effect of these waters. Brine baths, in conjunction with various douches, electricity, massage, applications of hot mud, &c., produce analogous but far less powerfully curative local effects than the Salsomaggiore waters employed in the same way. The cause of this more powerful and speedy action was supposed to be due to the absorption of the salts of lithia, bromine, strontium, and especially iodine (and perhaps certain organic sulphur compounds), contained so largely in the latter waters. The most careful tests, however, have hitherto failed to follow these substances from the unbroken skin through the organism, no traces of the same having been discovered in the excretions after Salsomaggiore baths of various strengths, duration, and temperatures. It has been asserted that cataphoresis would explain the supposed absorption. Elevey says that the effect of contact in mineral water baths reinforced by the natural electrical currents is more than sufficient to explain the increased tissue metamorphosis which occurs. At any rate we know that these waters, as employed at Salsomaggiore, do greatly accelerate tissue metamorphosis and that by means of various inhalations the more soluble salts are absorbed through the mucous membrane, thus contributing to enhance curative results.

Almost all varieties of inflammatory adhesions and deposits are liquefied and absorbed; ulcers, bone abscesses, suppurating glands, lupus vulgaris, and other tuberculous lesions are healed; chronic naso-pharyngeal and tracheo-bronchial catarrh, and even ozæna, are greatly benefited and often cured; and various secondary and tertiary syphilitic local lesions are much relieved and frequently removed. The various dyscrasiæ accompanying these maladies are rapidly and surely corrected and the organism is placed in more prosperous relation with its environment. Certain amusements are provided at the spa in the way of music and song, light operas, and theatrical representations which help to pass the time more agreeably, although they cannot rival the beauty and charm of this interesting folk and their wonderful country.

In this picturesque section of Lombardy, with its splendid seasonable climate and radiant azure sky, every footstep discovers some trace of Roman baths or other evidence of the extraordinary intelligence and energy of that mighty classic race. Mediæval art has also left enchanting monuments upon every hand—great castles and lordly villas, here and there vast convents and monasteries crowning noble heights, and over all the indescribable atmosphere of brave old Italy, the Madonna country of the world.

A CENTENARIAN.—The Hon. David Wark, of Fredericton, New Brunswick, celebrated his 100th birthday on Feb. 19th and received the cabled congratulations of King Edward on the occasion. He is the oldest public man in the British Empire and possibly in the world. Mr. Wark was born in Londonderry, Ireland, in 1804. He went to Canada in 1825, entered the New Brunswick Legislature in 1837, and has been a Senator of the Dominion continuously since the Confederation.

A CASE OF GANGRENE OF THE RIGHT FOOT OCCURRING IN THE NEWLY BORN.

BY DIGBY COTES-PREEDY, M.A. CANTAB., L.S.A. LOND.,
LATE HOUSE PHYSICIAN AT ST. GEORGE'S HOSPITAL.

ON August 27th, 1903, a married woman, aged 44 years, was confined of a full-term female child. She was the mother of ten children who are all alive and also had had three miscarriages. At every confinement she had suffered from rather severe post-partum hæmorrhage but otherwise she generally enjoyed good health. In June, 1903, she had a fall from an omnibus step on to her right side and a fortnight later she fell down some stairs in her house, again alighting on her right side. The confinement was superintended by an experienced midwifery student from St. George's Hospital. The presentation was of the right occipito-anterior variety. Strong pains commenced at 9 A.M., the child being born at 7.10 P.M. Some difficulty was met with on account of a slight impaction of the shoulders. The umbilical cord was found to be twisted twice round the neck. The right foot was the last to be born, but there was no trace of amniotic bands around it. Owing to the deep cyanosis of the child artificial respiration was resorted to for the space of ten minutes; this restored the breathing but at no time was respiration forcible in character. The general state of the infant continuing unsatisfactory and the condition of the right foot, which is described hereafter, being such that hospital treatment was indicated, a relative was requested to take the child to the hospital for admission, but on arrival at 10.30 P.M. I found that the infant had apparently been dead for about ten minutes.

The post-mortem examination was made 38 hours after death by Dr. T. R. Whipham, to whom I am indebted for the use of the following notes. The body was fat, well-developed, and of rather large size. The skin of the lower half of the right leg in front, of the dorsum of the foot, of the dorsal aspect of the first toe, of part of the dorsal aspects of the second, fourth, and fifth toes, and of the inner half of the under surface of the foot, including that of the great toe, was intensely red and devoid of its epidermal structures, being, in fact, in a state of early gangrene. On the dorsum of the foot the area corresponding to the cutaneous distribution of the anterior tibial nerve was specially affected. The gangrene, which was moist, affected only the skin and subcutaneous structures, the deeper parts being healthy; its line of demarcation was sharply defined. No macroscopic cause for the condition was found; there were no pressure on the arteries or nerves, no blocking of the vessels of the limb from the aorta to the foot, and no change to the naked eye in either the anterior or posterior tibial nerves. Microscopically, the posterior tibial nerve was normal. A portion of what was removed as the anterior tibial nerve proved to be the artery. This also was normal. The outline of the gangrene was so irregular that it seemed hardly likely to have been caused by intra-uterine pressure. The umbilical cord was attached and healthy. There were neither external signs of injury nor fractures of the bones. There was no fracture of the cranium. At the base of the brain on the left side there was considerable hæmorrhage under the dura mater but the source of the bleeding could not be determined. The brain weighed 12 ounces. All the vessels on the surface and in the substance were congested but nothing else abnormal was found. The lungs *in situ* were not fully expanded. The edges of both were very emphysematous and in places there was partial atelectasis, small pieces cut from both only just floating in water. The right side of the heart was slightly dilated, otherwise the viscera was normal. The other organs of the body showed no abnormality.

This case I have deemed of interest owing to its rarity. A search through many works has elicited nothing to explain adequately the cause of the gangrene—even Ballantyne's Ante-Natal Pathology afforded no assistance. Several theories have suggested themselves, such as amniotic bands, pressure effects produced in utero, the action of bacteria, and, lastly, the increased blood pressure produced by the excessive contraction of the womb during the labour which the minute

blood-vessels were unable to cope with—this reason I gave to the deputy coroner (Mr. R. Henslowe Wellington, M.R.C.S. Eng.) in order to account for the subdural hæmorrhage—but they cannot be substantiated sufficiently by the facts at my disposal. The two accidents experienced by the mother prior to the birth of the child seem to offer the only clue to the explanation of a condition which on account of its rare occurrence deserves to be recorded.

I have to acknowledge the kind permission of Dr. A. F. Stabb to publish this case.

Croydon.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF (?) TUBERCULOUS MENINGITIS.

BY WILLIAM R. BATES, L.R.C.P., L.R.C.S. IREL.

THE following case is, I think, of sufficient clinical interest to be recorded. The patient, who was a female, aged 19 years, was first seen by me at my house on Dec. 4th, 1900. She complained of feeling weak and tired, her appetite was capricious, there had been a gradual loss of flesh all the summer with increasing debility, and she had a large, painful, lymphatic swelling on the right side of the neck. Her temperature, taken in the mouth, was normal, her heart sounds were healthy, and there were no abnormal physical signs in the chest or the abdomen. She was ordered to paint the neck with a combination of collodion and belladonna and a pill containing arsenate of iron, nux vomica, and reduced iron was given.

I was called in to see her on Dec. 13th. She had been in bed from the 9th; intense headache commenced on the 10th but she had tried to get up on the 12th and was obliged to return to bed at once; vomiting commenced about 11 A.M. on that day. When seen by me her temperature was 103° F. and her pulse rate was 72; her respirations were quick; she had intense headache and intolerance of light with frequent vomiting; the pupils were equal and dilated; the bowels were constipated; there was no retraction of the abdomen. Her mistress was told that the illness was most probably meningitis and the girl was removed to her own home which, fortunately, was not far distant, where she could be well nursed. A powder containing ten grains of phenacetin and six grains of mercurous chloride was given. On the 14th she was worse. There was constant meningeal cry with marked retraction of the head; the vomiting still continued and occasional delirium was noticed. The patient's head was shaved, a large blister was applied to the nape of the neck, iodide of potassium in ten-grain doses with 15 grains of bromide of potassium was given every four hours, and mercurial ointment was rubbed into the axillæ and the groins night and morning. Her temperature ranged between 101° and 103° and the pulse was markedly slower. On the 15th the patient's condition was much the same but the pupils were sluggish in acting; her temperature was about the same and her pulse rate was 56; sobbing respiration was also noticed. On the 16th there was paralysis of the external rectus of the right eye. The discs were examined and marked neuritis was found but no tubercle was seen in the choroid. Vomiting still continued but was not so incessant. Tache cérébrale was well marked. On the 17th she was seen by me in consultation with my friend Dr. J. N. Richardson who agreed as to the diagnosis of meningitis, most probably of tuberculous origin, and an unfavourable prognosis was given. There was marked diplopia and both external recti were now affected; the pyrexia continued and the acuteness of vision was distinctly lessened. On the 18th the girl's condition was pretty much the same and it continued so through the 19th. On the 20th her temperature was normal in the morning, there was much less headache, and the vomiting which had gradually been subsiding for two or three days now ceased. In the evening her temperature was 99·4° and thereafter she steadily improved and gained flesh. From this time there was practically no pyrexia but double vision lasted for more than a fortnight and the squint did not quite disappear until May, 1901, when the girl was well enough to pursue her occupation.

What was the condition which gave rise to this train of symptoms? There can hardly be any difference of opinion as to some form of meningitis having been present. As there was no history of injury, middle-ear disease, or influenza the most probable varieties would be either (1) a septic form occurring in the course of some concurrent disease which I think need not be further considered, or (2) a specific form of the disease as the syphilitic or tuberculous. Against the first of these two causes is the objection that by the most careful examination and minute inquiries as far as they could be made without hurting the patient's feelings or those of her friends no evidence of primary sore, secondary trouble, or congenital affection could be found and I am left to fall back on the theory that the exciting cause of the illness was the tubercle bacillus. The history of increasing debility, the gradual loss of flesh, the affected lymphatic glands of the neck, and the age of the patient incline me to take this view, although it may be argued that from the manner in which the disease gave way to the treatment by mercury and iodide of potassium the case was one of specific disease.

The question of recovery from tuberculous meningitis is one in which I am much interested, as more than 20 years ago I attended a case which was then diagnosed as tuberculous and in which also there was an affection of the apex of the left lung, and this patient, who was a boy, got well and is now working with his father as a blacksmith. The absence of tubercle in the choroid is not sufficient to negative the diagnosis, as it is only present in a small percentage of cases which are indubitably proved by post-mortem examination to be tuberculous.

Ilkley.

THE LIFE SPAN OF THE GUINEA-WORM.

BY S. ARTHUR POWELL, B.A., M.CH. R.U.I.,
SURGEON TO THE POLICE HOSPITAL; PROFESSOR OF BIOLOGY, GRANT MEDICAL COLLEGE, BOMBAY.

A PAPER on this subject by Sir Patrick Manson appeared last July.[1] In Sir Patrick Manson's cases the time of possible infection extended from February to June. In the cases under consideration the period of exposure in the endemic area was only two days. I am indebted for the particulars to Mr. M. Cursetjee and Mr. Fazalbhoy Chinoy. A party of 16 gentlemen with five servants, all residents of Bombay, a city with a good artificial water-supply, where guinea-worm is only seen in patients from the country, chiefly from the Deccan, left Bombay and reached Mahad on April 20th, 1902, where they all stayed for two days, drinking the water from a well without filtering it. They returned to Bombay on April 22nd. On April 2nd or 3rd, 1903, the first worm made its appearance in the leg of one of these gentlemen. Up to the first week in July worms to the number of nine continued to be discharged from his body. Doubtless, owing to injection with perchloride of mercury, the exit of some of these worms was delayed, as they were killed, and considerable cellulitis and suppuration ensued. The next patient was delivered of a worm on May 1st, 1903, and five other patients between that date and May 20th. Seven patients in all were attacked, six of the party of 16 and one of the five servants. Nineteen worms in all were extracted. None had come out since the first week in July up to Oct. 3rd. The shortest period in these cases was 345 days and the longest 435. The great majority of the worms appeared a year and two or three weeks after the date of infection.

The estimation of the life span of this worm in its human host is a matter of importance in prognosis in the case of persons exposed to infection. Thus I had no hesitation in informing the ten gentlemen who have not yet suffered that they have little reason to fear the appearance of worms, a matter of considerable apprehension to some of them. Inquiries were made among the inhabitants of Mahad as to the prevalence of this worm in the district. The replies indicate that about half the population suffered from guinea-worm during 1903.

Two points of interest in connexion with this parasite may be mentioned here. There is frequently a considerable fever a few days before the worm becomes palpable. Two

[1] Brit. Med. Jour., July 4th, 1903, p. 10.

of those cases suffered from fever with swelling of the face and hands. The sensation of swelling and tension to the patient is greater than the appearance to the surgeon seems to warrant. This swelling of the face and hands I have frequently observed when the worm was in the lower extremities and seems independent of the situation of the parasite. The origin of this fever may be suspected from the absence of malarial parasites and an increase in the proportion of the eosinophile corpuscles in the blood. In a paper[2] read before the Bombay Medical and Physical Society I described six cases of guinea-worm infection in which examination of the blood showed 4·75, 5·5, 7·5, 7·5, 8·0, and 12·25 per cent. of eosinophile corpuscles respectively. The pus from one sinus contained 19 per cent. of eosinophiles.

Bombay.

SEVERE CASE OF ERYSIPELAS OF LEG FOLLOWING ULCERATION TREATED BY ANTISTREPTOCOCCIC SERUM; RECOVERY.

BY E. H. BLAKE, L.R.C.P. IREL., L.S.A.

THE patient whose case is now described was a single woman, aged 54 years. I was first asked to see her on Jan. 4th, 1904. On my arrival I found that she had been vomiting for some hours and as her history was an alcoholic one I prescribed a mixture containing carbonate of bismuth with bicarbonate of sodium and hydrocyanic acid. The next morning she seemed better but her sister, who was looking after her, asked me to see her leg. On the right leg was a large varicose ulcer which had not been dressed for some days and which smelt most offensively. Hot boric fomentations were ordered and the assistance of trained nurses was obtained. On the next morning erysipelas had commenced at the seat of the ulceration and quickly extended up the leg to the thigh. The patient now got rapidly worse in spite of treatment and on the evening of Jan. 8th her condition was desperate. The temperature was 105° F., the tongue was dry and brown, the pulse was feeble and irregular, and the patient was delirious. Antistreptococcic serum (from the Lister Institute of Preventive Medicine) was now injected. On the next morning the temperature was 100° and the patient seemed much better. Another injection of the serum was given. Since then the patient has made an uninterrupted recovery and is now convalescent.

Upton, E.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Observation on Metabolism in the Febrile State in Man.

A MEETING of this society was held on Feb. 23rd, Mr. ALFRED WILLETT, the President, being in the chair.

Dr. G. C. GARRATT read a paper on Metabolism in the Febrile State in Man. The paper reviewed the literature of the subject and gave the results of analysis of the urine of febrile patients carried out during seven years' residence at the London Fever Hospital. The cases studied formed a long series, unusually uniform as regards age, sex, and condition; moreover, the diet during pyrexia was the same and contained no nucleins. In the absence of pyrexia the above diet was found to cause in persons kept in bed no retention of sodium or chlorine and a small loss of nitrogen. A study of the literature resulted in the conclusion that the reduced excretion of urinary water was merely the result of increased loss by other routes, often preceded by earlier diuresis and accompanied by diminished intake by the mouth. Dr. Hutchison's analyses, which showed little excess of water in febrile tissues, were confirmed by Dr. Garratt, who also pointed out that Leyden's work showed no absolute retention of water, but quite the contrary, and that others had greatly underestimated the insensible loss. Passing to sodium and chlorine, it was pointed out that reduced excretion of chlorine accompanied nearly all acute fevers except malaria, further that retention of chlorine might continue far into convalescence and bore no relation to retention of water. Again sodium and chlorine, given in combinations other than sodium chloride, were nevertheless retained and the return of the one did not necessarily coincide with that of the other. Dr. Garratt considered that no satisfactory explanation of the phenomenon had been produced, but inclined on the whole to that which assumed the chlorine to be retained in combination with albumin. He had, however, failed to find chlor-albumins in muscle after fever. Estimations of urea showed the usual increase resulting from fever and there was also a similar increase of uric acid. Further, it appeared that no close relation could be traced between this excretion and that of phosphates. In fact, while the uric acid was increased more than urea the phosphates showed on the average no increase at all. The conclusion drawn was that endogenous uric acid came from proteids rich in nitrogen and sulphur and poor in phosphorus. Excretion of ammonia was considered in special relation to that of acids and bases and Dr. Garratt concluded that, while more work on this subject was necessary, the evidence that acids caused the increased production was not convincing. The excretion of phosphorus and free acid tended to run parallel but while there was on the average a slight increase of the latter there was none of the former. It might be that more than usual was lost by the bowel, nevertheless Dr. Garratt concluded that the total output in the cases studied was not greatly augmented. Further there was no evidence that retention of phosphates occurred. The estimation of sulphuric acid exhibited an increase which was out of proportion to that of urea. Potassium was also increased but less so than urea; it showed a certain parallelism with phosphoric and also with sulphuric acid and played the principal part in combining with these acids. Dr. Garratt suggested that some of the increase did not, therefore, represent metabolism of potassium holding tissues and that the output of phosphoric acid was a better guide thereto. The organism in these fevers appeared, in fact, to possess the power of selecting what proteids it would consume and to choose those rich in sulphur and nitrogen and to spare those rich in phosphorous and potassium. Calcium resembled chlorine, being excreted in abnormally small amount during fever. Magnesium was much reduced at first but increased later.

Dr. E. I. SPRIGGS said that while working in association with Dr. A. P. Beddard on metabolism in diabetes they had found a considerable increase in the acidity of the urine. Similarly in a case of acute rheumatism the acidity increased during the fever but fell directly the fever was over. The increase might be due to the excessive formation of acid or to an excessive nitrogenous metabolism. It seemed probable that the excessive nitrogenous metabolism played an important part, since if a healthy man was fed on a diabetic diet the acidity of the urine increased while he was on such a diet but subsequently became alkaline. When a man was breaking down a large amount of nitrogenous material a considerable quantity of acid was formed. The acidity was therefore probably not due to the fever but to the nitrogenous diet. Fever patients were in the main living on proteid. The ammonia present in the urine, as Dr. Garratt had shown, did not vary with the acidity of the urine and the ammonia was not produced in order to neutralise the acid. Dr. Spriggs propounded the following theory to explain the presence of the ammonia which could always be found in the urine. Ammonia was a normal product of cell metabolism in the body which became converted into urea in its passage through the liver. Such blood as did not pass through the liver would lose the ammonia it contained during its passage through the kidney. During febrile states the liver cells only in part converted the ammonia salts into urea and the unconverted ammonia would be excreted by the kidney. Such a theory would account for the variation in the amount of ammonia and the fact that even in health a small amount of ammonia was always present in the urine.

Dr. R. HUTCHISON, after speaking in the highest terms of the work which had been carried out by Dr. Garratt, said that he had worked especially at the excretion of chlorides in pneumonia. He had expressed the opinion that chlorides were retained in the fixed tissues. The work which Dr. Garratt had carried out showed that this was improbable but he thought that the chlorides might be retained in some combination with the albumins. Dr. Garratt's work also showed that the sodium might be retained not as sodium

[2] Examination of the Blood in 3400 Cases of Fever, Transactions of the Bombay Medical and Physical Society, September, 1903.

chloride but in some other combination. He had expected that the uric acid and phosphoric acid would, as the result of breaking down of nuclein, have run parallel, but, as Dr Garratt had shown, this was not the case. The whole paper showed the extreme difficulty of estimating metabolic processes from examination of the products excreted.

Dr. GARRATT replied.

MEDICAL SOCIETY OF LONDON.

Progressive Paralysis of the Insane.—Brachial Neuritis.

A MEETING of this society was held on Feb. 22nd, Dr. F. DE HAVILLAND HALL, the President, being in the chair.

Dr. T. B. HYSLOP read a paper on the various Progressive Paralyses met with in the Insane. After dealing with the subject of general paralysis of the insane and criticising many of the views which had of late years been put forward to support the theory that general paralysis was a clinical and pathological entity he proceeded to differentiate some of the more important of the progressive paralyses associated with insanity which were apt to be mistaken for "general paralysis of the insane." The following types of progressive paralysis as met with in the insane were then described: (1) those of toxic origin (alcoholic, syphilitic, febrile, uræmic, and poisons); (2) types due to lesions of the cerebral cortex, as in acute dementia, stupor, katatonia, hebephrenia, and atrophy; (3) types associated with various system lesions—viz., locomotor ataxy, spastic paraplegia (and other spinal lesions), hæmorrhagic focal lesions, and tumours; and (4) types of paralysis due, for instance, to injuries or sunstroke. With regard to alcohol he gave many arguments and clinical data in support of the view that alcohol *per se* did not produce a paralysis of the progressive type like so-called general paralysis. The various relationships of syphilis to progressive paralyses were then discussed and Dr. Hyslop differentiated the following types: (1) terminal syphilitic paralyses; (2) parasyphilitic progressive paralyses; and (3) congenital parasyphilitic progressive paralyses. He believed that syphilis alone was not accountable for the so-called parasyphilitic affections. These terminal progressive paralyses did not exhibit the lesions of syphilis, antisyphilitic medication was useless, and these paralyses were comparatively infrequent in the female sex. The Chinese and negroes were races in which syphilis was prevalent and yet they had hitherto proved to be almost free from tabes and progressive paralyses. These and many other considerations led him to seek other factors of causation than those which might fairly be regarded as syphilitic and evidence was fast accumulating which went to show that the defensive nervous mechanism was at fault in the terminal stages of syphilis. The rôle of stress and strain and the toxic influences at work as terminal infections were then discussed and the paper concluded with an outline of the various paralyses due to uræmia, cortical lesions, system lesions, and traumatism.—Dr C. E. BEEVOR remarked that the cases he had seen were of an earlier stage than those met with in an asylum. It was necessary to look for a group or combination of symptoms as an aid to diagnosis rather than individual symptoms, such as pupillary signs, alteration of the patellar reflexes, tremor, movements of the corrugator supercilii, and alteration of character (exaltation did not occur until the later stages). He agreed with Dr. Hyslop that alcohol *per se* was not a cause of general paralysis. Syphilis was very often in operation but not necessarily in every case.—Dr. E. MARRIOTT COOKE agreed that a great many diseases were confused under the term "general paralysis of the insane." The diagnosis was often very difficult in the early stages but not if the case was followed for some time. He agreed with the view of the French school that the disease was always grafted on a syphilitic basis. But there was always a superimposed cause, such as alcohol or sexual excess.—Dr. SIDNEY P. PHILLIPS asked for more information concerning the treatment of such cases with mercury or with iodide of potassium. The effect of these remedies would throw light on the causation.—Dr. J. VINCENT BELL remarked concerning those cases which started with a decay of the moral sense.—Mr. J. PEEKE RICHARDS congratulated Dr. Hyslop in calling attention to the popular error of including a great many conditions under the name "general paralysis of the insane." He thought it was quite possible that in some cases the mental symptoms might be due to the too prolonged treatment by antisyphilitic remedies.—Dr. HYSLOP replied.

Dr. C. W. BUCKLEY (Buxton) read a paper on Brachial Neuritis. Pain was the most marked symptom, generally slight at first but becoming constant and severe, with paroxysmal exacerbations. The majority of cases seemed to arise from an injury which was often very slight, but the neuritis might not show itself until two or three weeks afterwards when the other symptoms had subsided. There was then a gradual recrudescence of pain with marked tenderness over the affected nerves and the usual features of a neuritis. Trophic changes in the joint often resulted. Gout and rheumatism were common causes and the cases having these origins might commence with an acute inflammation of the fibrous structures of the muscles which spread to the other fibrous tissues in the neighbourhood, and as the acute symptoms subsided the existence of a neuritis became obvious and generally ran a chronic course. A chill in a gouty subject was liable to give rise to such a condition but cases of gradual onset and extremely chronic course were also attributed to gout. Cases arising in women at the menopause were not uncommon and while some of these were gouty in origin the majority were probably toxæmic and belonged to the same type of neuritis as that occurring in pregnancy and the puerperium. Reflex causes were sometimes responsible, such as aneurysm, or a lipoma in the area of distribution of the plexus. The duration was probably never less than three or four months; it might extend over years and relapses were not infrequent. The keynote of treatment must be complete rest as long as any actual inflammation of the nerves (as shown by tenderness) was present. At first specific treatment for gout or rheumatism might be indicated; in cases of inflammation of the fibrous tissue the combination of aspirin with phenacetin was useful and the coal-tar analgesics were generally preferable to opium. Hot applications relieved the pain and galvanism had also an anodyne effect, but Dr. Buckley found the free use of blisters along the course of the nerves most useful. Massage must not be used as long as any marked tenderness existed. The high-frequency current had been found beneficial by some observers in chronic cases but it seemed probable that these were cases of neuralgia persisting as a habit after the disappearance of the nerve lesion. Hydro-therapeutic treatment by means of hot douches and vapour baths was often very effectual and the mineral baths of Bath or Buxton were of the utmost value, especially in rheumatic or gouty cases.—Dr. PHILLIPS remarked that swelling of the limb might occur in such cases and hyperæsthesia might be very marked and associated with effusion of the joints. Some cases started with influenza. Salicylates were useful in some cases but not in all. Aspirin was useful. The ice-bag was a most efficacious remedy, especially if applied to the spine. Massage was most injurious.—Dr. WILFRED HARRIS observed that cases of arthritic atrophy of the deltoid muscle might easily be mistaken for neuritis of the circumflex muscle and suggested that a traumatic lesion of the shoulder-joint might explain some of the cases referred to.—Dr. F. J. POYNTON, while doubting the existence of the reflex arthritic amyotrophy of older authors, suggested that cases of so-called brachial neuritis were sometimes due to rheumatic or gouty joint affections.—The PRESIDENT remarked that the coal-tar derivatives often failed to relieve the pain, morphine and atropine being the only efficacious remedies.—Dr. BUCKLEY replied.

OPHTHALMOLOGICAL SOCIETY.

Gonorrhœal Conjunctivitis and Hydrogen Peroxide.—Congenital Anterior Staphyloma.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 11th, Mr. JOHN TWEEDY, the President, being in the chair.

Dr. ADOLPH BRONNER read notes of a case in which a woman, aged 32 years, had had her Eye Inflamed for two days before being seen by him. The lids were swollen and a profuse discharge was present in which gonococci were found. Perchloride of mercury was used as a lotion as well as protargol (5 per cent.) to the lids and drops of 3 per cent. hydrogen peroxide were used every four hours. On leaving off the peroxide the cornea rapidly became ulcerated but on recommencing it the ulcer at once

ceased spreading and healed, leaving remarkably little scar behind. Excellent vision was obtained and Dr. Bronner had never seen so bad a case make so remarkably good a recovery. This he attributed to the peroxide.—The PRESIDENT said that he had used hydrogen peroxide daily in cases of hypopyon ulcer but had not tried it for purulent ophthalmia. The ulcer healed very well indeed without perforating or scarring.—Mr. GUSTAVUS HARTRIDGE said that years ago all cases of purulent ophthalmia at the Royal London Ophthalmic Hospital were treated with it but that for some reason or other it had been given up. He thought that protargol of weaker strength than 20 per cent. was of very little use.—Mr. W. T. HOLMES SPICER said that some years ago he published a large number of cases of purulent ophthalmia treated at the Royal London Ophthalmic Hospital and he found that those treated with silver did much better than when treated only with peroxide.—Dr. BRONNER, in reply, said that he did not at all advocate the use of hydrogen peroxide to the exclusion of silver and other remedies but in combination with them he was much impressed with its utility.

Mr. J. HERBERT PARSONS read a paper on Congenital Anterior Staphyloma. A girl, aged three days, was admitted to the Royal London Ophthalmic Hospital, under the care of Mr. J. H. Fisher, with an anterior staphyloma of the left eye. The condition was noticed at birth. The mother was healthy and the confinement was normal; the child was born immediately after rupture of the membranes; there was no other deformity. There were a very slight mucous discharge and a complete anterior staphyloma with no anterior chamber. The iris was adherent to the pseudo cornea which was very thin and almost transparent. Pathological examination showed the usual features of an anterior staphyloma, the lens being *in situ* and the whole eye in an early stage of panophthalmitis. The posterior chamber was full of polymorphonuclear leucocytes which were also present in the vitreous. The true cornea at the sides showed dense infiltration; the epithelium and Descemet's membrane were present here only. The anterior capsule of the lens was ruptured; the lens was cataractous but there was no anterior capsular cataract. Nine previous cases of congenital anterior staphyloma with pathological examinations had been reported. All the cases showed exactly the same features as were found when the condition developed in the usual manner after birth. It was probable that the intra-uterine cases were due to the same cause—namely, perforation of the cornea. Endogenous infection was improbable owing to the absence of blood-vessels in the fœtal cornea. Exogenous infection through the amniotic fluid was more probable. It was almost impossible to explain the cases on the theory of maldevelopment.—Mr. E. TREACHER COLLINS and Mr. EDWARD NETTLESHIP discussed the case.

The following cases and card specimens were shown:—

Dr. A. OGILVY and Mr. SYDNEY STEPHENSON: Specimens of Epithelioma of the Ocular Conjunctiva.

Dr. ARNOLD LAWSON: Traumatic Aniridia.

Mr. N. BISHOP HARMAN: Nose blinking movements.

Mr. HARTRIDGE: Unusual Opacity of the Posterior Part of the Lens and Capsule.

Mr. G. W. THOMPSON: (1) Double Kerato-iritis in an infant; and (2) Peculiar Changes of, and around, the Disc.

Mr. M. S. MAYOU: Two cases of Cerebral Degeneration from the same family associated with macular changes.

Mr. W. H. H. JESSOP: Epibulbar Tumour.

LIVERPOOL MEDICAL INSTITUTION.

Perforating Ulcer of the Stomach.—Perforating Ulcer of the Duodenum.—The Treatment of Malarial Fever.—The Treatment of Placenta Prævia.

A MEETING of this society was held on Feb. 18th, Dr. JAMES BARR, the President, being in the chair.

Dr. R. J. M. BUCHANAN and Mr. W. THELWALL THOMAS related a case in which an operation had been successfully performed for Perforated Gastric Ulcer. The patient was an anæmic girl who was suddenly seized with acute abdominal pain for which she was admitted into hospital. The diagnosis was at first doubtful; the continued elevation of temperature and a marked leucocytosis suggested the possibility of typhoid fever. The subsequent progress of the case, however, revealed a localised peritonitis which was thought to be most probably due to a perforated gastric ulcer. On the twelfth day of the illness Mr. Thelwall Thomas operated. The stomach and the liver were adherent to the abdominal wall and on separating these adhesions a localised abscess was opened and a distinct hole was seen in the stomach. An unsuccessful attempt was made to close the perforation with stitches and finally the abdominal wound was left open and packed with gauze. Convalescence was prolonged but the patient ultimately made a satisfactory recovery.

Mr. DAMER HARRISSON related a case in which he had successfully operated upon a man, 45 years of age, for Perforating Ulcer of the Duodenum. There had been no previous gastric symptoms. The patient was suddenly seized with acute abdominal pain which he referred more especially to the right iliac fossa. An operation was performed 11½ hours after the onset; a perforated ulcer of the duodenum near to the pylorus was found and was closed with sutures.—Mr. T. C. LITLER JONES referred to a case in which perforation of a gastric ulcer had occurred at midnight; the patient finding that the pain was relieved by the knee-elbow position remained in that posture all night. At the operation next day there was an anterior perforation of the stomach with little, if any, extravasation but fair adhesions.—Dr. E. T. DAVIES, Mr. G. P. NEWBOLT, Mr. GEORGE G. HAMILTON, Dr. W. CARTER, and Dr. C. J. MACALISTER took part in the discussion on these cases.

Dr. CARTER read a note on the treatment of some cases of Malarial Fever. Four cases had come under his care during 1903 and they all more or less resembled each other. They were cases of obstinate continuance of fever and in spite of all the ordinary remedies there were complete breakdown of the general health and loss of weight. In every instance a complete and apparently permanent relief of all symptoms had followed upon the administration of Warburg's tincture. In one case the patient had suffered from frequent attacks of malarial fever during the last three years and during the last attack, in spite of the administration of large doses of quinine, the temperature rose to 106° F., but after a few doses of Warburg's tincture the temperature fell to normal, the general health markedly improved, and apparently permanent relief had followed.

Dr. H. BRIGGS read a paper on the Treatment of Severe Cases of Placenta Prævia. By severe cases were understood one considerable or two or more recurrences of hæmorrhage, regardless of the degree of placenta prævia. The paper was mainly based upon the more modern means of treatment which promised to improve the results obtainable in the management of these cases. Dr. Briggs first alluded to the bag devised by Champetier de Ribes which, together with its forceps, presented an inconvenient and cumbrous appearance; hence possibly the comparative rarity of the use of the bag in the treatment of severe cases of placenta prævia. Its use could be rendered easy by preliminary dilatation of the cervix by the finger or by Bossi's method in the rare instances in which the latter was required. The 22 cases tabulated and the conclusions formulated in a paper by Dr. G. F. Blacker in the Transactions of the Obstetrical Society for 1897 were freely used by Dr. Briggs. Dr. Briggs cited two severe cases of placenta prævia as illustrating the value of the treatment which he advocated: (1) in the twenty-eighth week of gestation when the cervix was closed, the bleeding was free, and labour pains were absent; and (2) a full-term labour with copious hæmorrhage. In both the bag was used and in the former preliminary dilatation was effected by Bossi's instrument, which enabled the medical attendants to complete what had been a presumptive diagnosis and to introduce the bag of Champetier de Ribes, which served its purpose by controlling the bleeding and inciting and completing labour in eight hours. In the second case labour had commenced and was completed with a living child in the first vertex position in two and a half hours after the bag had been introduced. Dr. Briggs then referred to de Paoli's 19 cases of placenta prævia treated by Bossi's method, completed in from five to 25 minutes, without laceration of the cervix and with a death-rate of one mother and three children. Dr. Briggs expressed his opinion that rapid delivery in cases of placenta prævia was becoming a more common practice. He cited his own experience in six cases in which for grave maternal conditions he had used Bossi's method. As to the use of the bag, its great value consisted in its easy introduction, its standing boiling, and its perfect control of the bleeding, forming, as Dr. G. E. Herman had stated, a better hæmostatic wedge than the half-breech of the child after

turning. From his own experience of 30 cases treated by version he concluded that forcible delivery was rarely necessary, for in all these cases the bleeding had been controlled and without exception traction on the child was not required to check bleeding. It was probable that in many cases hæmorrhage from laceration of the cervix during podalic version was a source of bleeding due to the treatment adopted. The interests of the child were improved by the use of the bag of Champetier de Ribes and whenever the bag was available it ought to be used in the treatment of placenta prævia.—Dr. JOHN E. GEMMELL said that most cases of placenta prævia were of the marginal type and in these the use of the bag was not necessary. Further, the introduction of the bag necessitated the presence of a second medical attendant to administer an anæsthetic, which would render its general employment impracticable.—Dr. LLEWELLYN A. MORGAN relied upon tight packing as a routine treatment in cases of severe hæmorrhage.—Dr. F. HEATHERLEY, Dr. DAVIES, Dr. MACKAY, Dr. W. BLAIR BELL, and Dr. LITTLE also took part in the discussion and Dr. BRIGGS replied.

EDINBURGH OBSTETRICAL SOCIETY.

Hebotomy.—Nephrectomy and Exploratory Nephrotomy.

A MEETING of this society was held on Feb. 10th, Dr. N. T. BREWIS, the President, being in the chair.

Dr. D. BERRY HART read notes on a case of Hebotomy (lateral section of the os pubis). He said that the aim in obstetric practice was to find in difficult cases a satisfactory operation safe for mother and child. Thus in flat pelvis when forceps or turning failed, as when the conjugata vera was below three and a half inches, then it was expected that symphysiotomy would be resorted to down to two and three quarter inches. After that only Cæsarean section or craniotomy would be available. Objection was made to symphysiotomy on the ground of the difficulty of insuring asepsis, the possibility of injury to the neighbouring structures, and the risk of the resulting union not being immoveable. Hebotomy was the lateral section of the body of the os pubis avoiding the symphysis; the objections to symphysiotomy affected this operation in much less degree. It had been recently revived by Gigli of Florence who used a special wire saw for the operation. An oblique incision was made through the soft parts down to the os pubis; a director was passed behind the body of the bone, keeping close to it, and afterwards the special wire saw. The saw divided the bone rapidly and easily. Any bleeding was readily controlled by pressure. After the section the pelvis opened out and permitted of an easier passage of the child. The periosteum was then stitched together and afterwards the skin wound. Dressings were applied, a binder was firmly fixed, and sand-bags were arranged at the sides of the pelvis. Dr. Hart gave details of a case where in a woman's first confinement craniotomy was performed; in the second labour hebotomy was tried and the child was easily delivered with forceps. The patient unfortunately died on the third day from exhaustion with no local symptoms. The necropsy seemed to show acute fatty degeneration of the tissues, probably the result of the chloroform. She had suffered severely from chloroform sickness both after the previous and this labour. The death-rate at present was about 6 per cent. The amount of space gained was three fifths of an inch for two and a half inches of divergence.—Professor A. R. SIMPSON, Dr. R. C. BUIST, Dr. A. H. F. BARBOUR, and Dr. F. W. N. HAULTAIN made remarks on the paper.

The PRESIDENT described four Renal Cases. The first of these involved the removal of a large pyonephrotic kidney weighing 45 pounds and having the following dimensions, greatest circumference four feet, greatest diameter 15 inches, and greatest thickness ten inches. On section of the tumour no kidney substance could be distinguished with the naked eye but the organ appeared to be converted into a loculated cyst containing liquor puris and pus cells. The main cyst was divided into several loculi which were distinct but communicated with the renal pelvis by small rounded openings in which three rough calculi were present. A large calculus obstructed the ureter. The patient was known to have a renal swelling for 25 years. In 1875 she was known to have had a floating kidney and in 1888 a renal tumour. She could neither lie down nor sit on account of the great size of the tumour. Dr. Brewis performed nephrectomy. The patient was now in good health. The second case was one of tuberculous kidney and ureter and nephro-ureterectomy was performed. On examination the enlarged right kidney and ureter were easily felt. Both ureters were catheterised. The urine from the right ureter contained tubercle bacilli, but none were found in the sample from the left. The bladder was healthy except in the region of the right ureteric orifice. The freezing point of the blood was normal. The kidney and ureter were removed. The ureter just below the renal pelvis had a circumference of four inches and was adherent throughout its whole extent. When the patient left the hospital no tubercle bacilli could be found in the urine. She was now well and strong. In the third case there was adenoma of the suprarenal body. The patient, who was 41 years of age and had been pregnant six times, had observed an abdominal swelling for seven years and had lost two stones in weight during the last three years. She had had four attacks of hæmaturia since the abdominal swelling had been noticed. The tumour was removed and the kidney with it. The patient recovered. In the fourth case exploratory nephrotomy for hæmaturia was performed. The patient, who was 43 years of age and had been pregnant eight times, first noticed blood in her urine four years ago; during the last four months the bleeding had been frequently very profuse. With the cystoscope blood was seen coming from the left ureter, while the urine from the right ureter was quite clear. The President cut down on the left kidney and found it to be universally adherent and uniformly enlarged. He made a longitudinal incision in the middle line through the whole substance of the kidney, dividing the organ into halves. Nothing abnormal was found in the pelvis but the section presented the appearance of chronic interstitial inflammation. The two halves were stitched together by six or eight catgut sutures and the kidney was returned. The patient recovered and had had no hæmaturia since.—Professor SIMPSON, Dr. HART, Dr. HAULTAIN, Dr. J. W. BALLANTYNE, and Dr. W. FORDYCE discussed the paper.

GLASGOW NORTHERN MEDICAL SOCIETY.—A meeting of this society was held in the Western Infirmary on Feb. 19th, Dr. J. G. Connal being in the chair.—Dr. D. J. Mackintosh showed ten patients who had been under treatment in the electrical department. Some of them had been treated by the x rays alone and some by the x rays combined with Finsen's application of light. Six of them suffered from lupus, one from rodent ulcer, one from epithelioma, and two from tuberculous disease of the hand. In two cases the lupus was quite healed and in six of the others there was more or less improvement.—Mr. J. Walker Downie gave a demonstration on Suppurative Affections of the Accessory Sinuses of the Nose, illustrated by lantern slides, patients, and specimens. He said that these sinuses were divided into an anterior and posterior set, the anterior set consisting of the frontal sinus, the anterior ethmoidal cells, and the antrum of Highmore, while the posterior set consisted of the posterior ethmoidal cells and the sphenoidal sinus. The antrum of Highmore might become the seat of simple catarrhal inflammation with secretion of mucus. This condition was frequently associated with nasal catarrh and tended to spontaneous recovery if the ostium remained open but if it became blocked suppuration might follow. A suppurative condition might also arise from septic catarrh of the nose or from influenza. In such cases the patient complained of pain over the cheek and there were a purulent, intermittent, unilateral discharge and occasionally a fulness of the cheek. A unilateral purulent discharge occurring in the adult was probably due to an antral empyema, while in a child such a discharge was generally due to a foreign body. In these cases an odour was complained of by the patient which was not perceived by those around, whereas in ozæna the patient, owing to the sense of smell being blunted, did not notice the odour which was marked and offensive. Pus in the middle meatus might come from the frontal sinus, the anterior ethmoidal cells, or the antrum. In order to arrive at a diagnosis the meatus should be wiped out and the postural method tried; the meatus should then be again examined and if the pus came from the antrum a bead of it would generally be seen at the ostium. Another method of diagnosis was by transillumination, performed with a lamp in the mouth, with the lips closed, in a

darkened room. If the antrum was healthy it was generally fairly translucent, whereas if it contained pus it was opaque. The diagnosis might be completed by tapping the cavity through the nasal wall, the canine fossa, or an alveolus after extraction of a tooth. In acute cases the treatment consisted in the use of hot fomentations, soothing steam inhalations, and intranasal applications to reduce turgescence and to cleanse the surfaces. When these failed to relieve the cavity it might be tapped. In chronic cases all sources of intranasal obstruction, such as polpyi, hypertrophied bone, and mucosa, should be removed. If the discharge persisted Mr. Downie recommended the performance of a radical operation through the canine fossa under a general anæsthetic. He spoke against the common practice of tapping and draining through an alveolar opening. He next described the frontal sinuses and gave full details of the operation for exposing the sinus in cases of frontal sinusitis after all intranasal lesions had been rectified. In conclusion, he referred shortly to suppurative affections of the ethmoidal cells and of the sphenoidal sinus.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Feb. 17th at the Medical Institute, Birmingham, Dr. W. G. Lowe of Burton-on-Trent being in the chair.—Mr. L. P. Gamgee showed a woman, aged 46 years, who in October, 1901, suffered from a severe attack of Right Hypochondriac Pain accompanied by Jaundice. This passed off and she was then free from symptoms for a year and ten months. During August and September, 1903, she had numerous attacks of pain and was continually jaundiced, the degree of the jaundice varying. At the beginning of October she had great tenderness on pressure over the right rectus abdominis muscle about midway between the ensiform cartilage and the umbilicus and a swelling situated deeply in the abdomen could be felt in this position. On Oct. 18 h the abdomen was opened and the biliary apparatus was explored. No calculus was found and no obstruction to the ducts could be made out. The head of the pancreas was hard and markedly enlarged. The gall-bladder was stitched to the skin and a fistula was maintained for three months. At the present time some fulness could be felt in the old position but there was no distinct swelling and the tenderness had almost disappeared. The attacks of pain and jaundice had not recurred. The case was presumably one of chronic inflammatory enlargement of the head of the pancreas.—Dr. C. E. Purslow showed a Cystic Tumour of the Uterus. The patient, who was 24 years of age and married, with one child, was admitted to the Queen's Hospital, Birmingham, on Nov. 12th, 1903, with a cystic swelling of the abdomen reaching to two inches above the umbilicus and presenting all the physical signs of an ovarian cystoma. The swelling had been first noticed six weeks previously and both the patient and the medical man under whose care she had been thought that it was growing rapidly. Abdominal section was performed. The cyst when exposed had the appearance of an ovarian cyst. It was tapped and a large quantity of thin yellow fluid escaped from two separate locules. On commencing to remove the cyst it was seen to be growing from the fundus uteri, spreading out widely into each broad ligament and having extensive adhesions to omentum and intestine. The operation was difficult and prolonged; it was found necessary to amputate the uterus at the level of the internal os. The patient made an excellent recovery.—Mr. H. G. Barling read a paper entitled "Notes on Gastrojejunostomy, with a Comparison of Various Methods." The posterior operation was recommended, the jejunum being taken up through an opening in the transverse mesocolon. Mr. Barling based his experience of this operation upon a record of 18 cases, of which 16 recovered. The methods of union by Murphy's button, by Robson's bone bobbin, and by suture were discussed and the last was advised as providing a wider opening than either of the others.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 11th, Professor John W. Taylor, the President, being in the chair.—Dr. William Duncan read notes on a case of Early Rupture of a Tubal Gestation and with the epidiascope illustrated the mode of the imbedding of the ovum by microscopical sections which showed that the gestation sac was separated from the lumen of the tube by muscular tissue. We publish this paper in full at p. 583.—After discussion, in which the President, Dr. J. J. Macan, Dr. Herbert Snow, Mr. W. D. Spanton, Mr. Christopher Martin, and Dr. H. C. Pope took part, Dr. Duncan explained his preference for suture of the abdominal wound in layers, which in ordinary circumstances did not take more than a couple of minutes, and pointed out that the ovum not merely found its way into the musculosa of the tube but its port of entry completely closed up.—Dr. H. Macnaughton-Jones showed an Aseptic Cap for the Mouth and Nose supported on a spectacle frame and devised by himself, which he thought equally effective and less cumbersome than others recommended. He read notes of a case of General Vesicular Eruption following a dressing of Iodoform and pointed out that an idiosyncrasy against that drug might exist and should be ascertained.—Dr. Snow read notes on a case of a Cyst simulating Femoral Hernia, and Mr. Spanton made a short communication on Woollen Fibres as a cause of Bladder Irritation in Girls, relating three cases in which such trouble had been due to the wearing of coarse woollen under-garments the fibres of which were detected in the urine.—The President, after thanking Dr. Snow and Mr. Spanton for their interesting communications, proceeded to read his Inaugural Address, an abstract of which was published in our columns last week.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on Feb. 9th, Sir W. J. Collins, the President, being in the chair.—A paper was read by Mr. J. H. Targett on Homicide by the Introduction of Foreign Bodies. Specimens were shown in a recent case where a man confessed after some ten years to having murdered his child, aged ten months, by pushing three corks into the back of the mouth, two of which were found, as seen in the specimen, in the stomach; the third, a larger one, was impacted in the upper end of the œsophagus.—This led to an interesting discussion in which Earl Russell, Dr. F. J. Smith, Dr. F. J. Wethered, and others joined. It appeared that in parts of the Midlands there was a practice of placing pieces of cork and sponges in the food of cats with a view to causing obstruction of the bowel and death.—A second paper was read by Professor A. Bostock Hill (Birmingham) on Abortion by Drugs, especially diachylon.—An interesting paper was also read by Dr. S. B. Atkinson on Live Birth, the discussion upon which was postponed until the meeting on April 19th.—Nine new members were elected, amongst whom was Sir Joseph Walton, one of the judges of the High Court.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 19th, Dr. Leslie Durno, the President, being in the chair.—Dr. H. P. Miller gave a demonstration of Eye Diseases, including interstitial keratitis; iritis with punctate keratitis; coloboma of irides and of one lens; a boy with normal vision whose cornea, iris, and lens had been pierced accidentally by a piece of steel and surgically removed; opaque nerve fibres in a myope; congenital rhythmic semiclosure of the left orbicularis oculi in a girl, aged nine years, associated with mastication; and orbital tumour with proptosis in a rickety child aged 18 months. A diagnosis of hæmorrhage was made.—Dr. David Ross showed a man, aged 20 years, who a year ago began to pass an Excess of Urine. He passed now on an average 22½ pints of urine and drank 20 pints of liquid in 24 hours. He was losing weight, strength, and appetite. The urine was clear, with specific gravity 1001, and contained neither sugar nor albumin. The rarity of the state was noted.

HUNTERIAN SOCIETY.—The annual meeting of this society was held on Feb. 10th, when the following elections were made. Council:—President: Dr. Frederick J. Smith. Vice Presidents: Mr. John Adams, Mr. J. H. Targett, Dr. John W. Oliver, and Dr. T. H. Arnold Chaplin. Treasurer: Dr. R. Hingston Fox. Trustees: Mr. F. M. Corner, Mr. F. Gordon Brown, and Mr. R. Clement Lucas. Honorary Librarian: Dr. William Rawes. Honorary Secretaries: Dr. T. Glover Lyon and Mr. Harold L. Barnard. Dr. H. Russell Andrews, Dr. S. H. Appleford, Dr. Arthur T. Davies, Mr. W. H. Best, Dr. J. H. Bryant, Dr. R. Fortescue Fox, Dr. W. J. McCulloch Ettles, Mr. A. W. Galloway, Mr. F. Rowland Humphreys, Dr. W. Henry Kelson, Dr. Herbert V. Hickman, and Dr. William A. Dingle. Editorial Secretary: Dr. Edward W. Goodall. Auditors: Mr. Brown, Dr. Davies, Dr. G. Newton Pitt, and Dr. Smith.

Reviews and Notices of Books.

Clinical Pathology of the Blood: a Treatise on the General Principles and Special Applications of Hæmatology. By JAMES EWING, A.M., M.D., Professor of Pathology in Cornell University Medical College, New York City. Second edition, revised and enlarged. Illustrated with 43 Engravings and 18 Coloured Plates drawn by the Author. London: Henry Kimpton. 1904. Pp. 495 Price 21*s.*

IN our review of the first edition of this work we spoke favourably of the scope of the book and of the manner in which Dr. Ewing had carried out his labours. We have no reason to alter our views after a perusal of the second edition. During the two years which have elapsed between the publication of the volumes the contributions to the knowledge of the blood in both its clinical and its pathological aspects have been very numerous and in many instances of fundamental importance. Dr. Ewing has succeeded in incorporating the results of these recent studies in a form which is useful and available both for the medical practitioner and for the student of hæmatology. Considerable additions have been made to the chapter on Technics. A full account is given of the "medico-legal serum diagnosis of blood." Dr. Ewing asserts that one fruitful result of the recent trend of study of the mechanism of immunity has been the discovery of a delicate and fairly trustworthy method of distinguishing human blood from that of the lower animals. The first step in the elaboration of this method of serum diagnosis consisted in the discovery by Tschistowitsch that the serum of an animal treated by injections of defibrinated blood or of serum from another species of animal develops the power of agglutinating and dissolving the red cells or of causing a precipitate in the serum of the second animal. Investigations by other observers have shown that this principle can be applied to the identification of blood for medico-legal purposes and that it is possible thereby to determine the origin of old blood stains. The mode of preparing the necessary serum is minutely described but the process is an elaborate one. The delicacy of the test, however, seems to be very great, a reaction having been obtained in solutions of blood too weak to give the absorption spectra and in solutions of 1 of serum to 50,000 of blood. After reading Dr. Ewing's remarks we agree with him that there are many difficulties in applying this test and that an absolutely faultless technique is required. The proceeding is one which should be carefully investigated, as if satisfactory results can be obtained a great step in advance will have been made in the requirements of forensic medicine.

A paragraph in the first chapter is devoted to the subject of Cryoscopy. It has been shown that certain clinical deductions can be drawn from the determination of the freezing point of the blood. The results arrived at by various observers are here recorded. The apparatus employed in applying the test is described as is the method of using it. Dr. Ewing quotes Dr. Carrara who found cryoscopy of the blood serum the most trustworthy test for the medico-legal diagnosis of death by submersion. Dr. Carrara maintains that the absorption of fresh water through the lungs, gastro-intestinal tract, and skin raises the freezing point of blood serum, while salt water lowers it, in each instance more markedly in the left than in the right side of the heart.

In Chapter III., on the Morphology and Physiology of Red Cells, much new matter has been added. An excellent account is given of the varieties of the red cells and the pathological changes which they may undergo. Especially worthy of note are the remarks on the influence of therapeutic measures on these cells. The changes produced in them by the absorption of iron, arsenic, mercury, and lead are discussed in detail.

In no other department is the examination of the blood to be interpreted with greater certainty in one case or with greater reserve in another than in its application to the various types of leukæmia, and the chapter on this condition now includes the most noteworthy additions to medical knowledge on this subject. Under certain conditions the changes in the blood may yield positive diagnostic signs of leukæmia, whilst in other circumstances the changes may justify only a probable diagnosis. The occurrence of intercurrent infections seems to have a considerable effect in preventing an absolute diagnosis being possible. Again, in some stages of leukæmia the blood may fail to furnish indications of the nature of the disease which may then be overlooked. Most writers seem to agree that the early stages of the disease often escape detection and also that many spurious cases have appeared in medical literature, a false diagnosis having been arrived at.

In the chapter on the Leucocytes and Leucocytosis the essential features of Ehrlich's theories on immunity have been presented but Dr. Ewing points out that the limits of the volume do not permit full discussion of this subject.

Part II. of the work, which is devoted to the Special Pathology of the Blood, contains a vast amount of interesting information. The condition of the blood in the various acute specific diseases is carefully considered and the latest views are incorporated. The criticism of Widal's test for typhoid fever will be read with interest, as this diagnostic measure is now very extensively used. Dr. Ewing asserts, and the majority of medical practitioners who have had experience of the test will doubtless agree with him, that the difficulty in determining the value of the test in diagnosis arises principally from the divergent opinions regarding the essential features of a complete reaction. The belief in the specific quality of Widal's reaction has been almost abandoned; but, nevertheless, we agree with Dr. Ewing that the test remains an extremely valuable diagnostic procedure under several conditions. As in the case of other bacteriological tests used for clinical purposes—e.g., the search for tubercle bacilli in the sputum—a negative result is of little import unless obtained during the height of the disease (from the third to the fifth week) and on repeated examinations. In the great majority of cases the reaction disappears within a few weeks after convalescence. We can confirm Dr. Ewing's assertion that authentic cases, some of them fatal, have not given a positive reaction at any time during their course.

Dr. Ewing's work is a valuable contribution to the knowledge which at present exists with regard to the clinical pathology of the blood and we can cordially recommend it to our readers as a trustworthy book of reference.

First Dressing on the Battlefield. By Colonel NICHOLAS SENN, M.D., Ph.D., LL.D. Chicago, Ill., Surgeon General of Illinois; Lieutenant Colonel and Chief of the Operating Staff with the Army in the Field during the Spanish-American War; Professor of Surgery, Rush Medical College. Reprint from the *Journal of the Association of Military Surgeons of the United States.* Carlisle, Pennsylvania: The Association of Military Surgeons. 1903. Pp. 40.

THIS is a publication which may be read with profit and interest by civilian and army surgeons alike. It gives a brief history of the subject of which it treats, with the views and opinions that have been expressed by different authorities, together with those which have commended themselves to the author after having been carefully thought out by him and tested experimentally on the battlefield. As to the value of a first-aid dressing in war in preventing infection of wounds there can be no doubt. An ample experience has been

accumulated in proof thereof and it has become generally recognised that the first and most important thing to be done for a soldier in the fighting line is to provide him when wounded with an early and secure application of a first dressing. It is mainly in regard to what is the best and most effective system and method of doing this and as to various points of practical detail that any difference of opinion or practice can be said to exist. During the Spanish-American war it was found that many of the dressings became displaced before the wounded reached the field hospitals and infection could often be traced to this. The necessity of providing a means of direct fixation of a dressing as an essential component part of the first-aid package consequently became apparent. This was met by including some strips of rubber adhesive plaster of American manufacture in the package. After varied observations and experience in the Greco-Turkish and Spanish-American wars Colonel Senn formed very definite conclusions—which it is the purpose of this pamphlet to set forth—in reference to what a field dressing should contain and what may be expected from it by a timely resort to its use in the field. It goes without saying that the package must be as light and small as possible, simple in its make-up and application, and yet containing everything essential to protect the wound against subsequent infection. He recommends the employment of boro-salicylic powder as the antiseptic to be relied upon and in the course of a few pages, beginning at page 17, there is a full and illustrated description of the package and dressings devised by Colonel Senn showing the manner of their application with gauze roller and adhesive plaster. We need not accompany the author throughout his observations and comments which strike us as, speaking generally, practical and sound. At the end of his pamphlet he sums up these in 25 conclusions. If any of our readers cannot peruse the pamphlet as a whole (as we advise them to do) they might at any rate consult these conclusions with advantage.

Handbuch der Geburtshülfe. (*Handbook of Midwifery.*) By Numerous Writers. Edited by Professor F. VON WINCKEL. Vol. I., Part 1. With numerous tables and illustrations. Wiesbaden: J. F. Bergmann. 1903. Pp. 657. Price 13.60 marks.

WHEN we remember the position which Professor von Winckel holds in the profession, the numerous writings which have appeared from time to time from his pen, and above all his excellent "Lehrbuch der Geburtshülfe," one of the best text-books on midwifery, we are delighted to see that he is responsible for the editing of the new "Handbuch der Geburtshülfe." The numerous advances which have been made in all branches of obstetric medicine during the last few years, and especially in the science of obstetrics, render the publication of such a work doubly welcome. The names of the large number of well-known authorities whose coöperation Professor von Winckel has secured are a sufficient guarantee that when finished this treatise will be a most complete and authoritative work. A book of this character, containing all the newest facts and theories in the science and art of obstetrics and a complete bibliography of recent writings, cannot fail to be of the greatest assistance to all those engaged in this special branch of medicine.

The first volume opens with a most interesting survey of the history of midwifery from the earliest times to the end of the nineteenth century. This is contributed by the editor himself and is illustrated by an interesting series of engravings of celebrated obstetricians from Hippocrates onwards. The rest of the volume is devoted to a consideration of the anatomy, physiology, and symptomatology of pregnancy. The first two chapters by Strassmann are concerned with the beginning of pregnancy, including an account of menstruation and ovulation and dealing with the changes in the ovum consequent on impregnation and the early stages of its development. The third chapter, one of the most interesting in the book and exceedingly well written by Pfannenstiel, is on the Changes in the Uterus consequent on Pregnancy, the Imbedding of the Ovum, and the Formation of the Early Placenta, Membranes, and Cord. The subject is very completely and fully discussed, occupying some 100 pages, and is elucidated by a number of most excellent drawings. The succeeding six chapters are devoted to an account of the anatomy of the fœtus, the placenta, and the liquor amnii and of the changes taking place in the maternal organism during pregnancy, and are written by von Rosthorn. He also describes the changes in the pelvic organs occurring during pregnancy. Under the Symptomatology of Pregnancy Goenner writes a description of the uterus and its contents during the various months of pregnancy, the minor disorders of this condition, and the position of the child in utero. The last two chapters are by von Winckel and deal with the subjects of Auscultation and the Duration of Pregnancy. It is impossible in the space at our command to consider these articles in detail. They are all of the greatest excellence and the work is likely to be a classic on the subject for some time to come. The volume contains numerous illustrations and tables and the whole is worthy of the high reputation of its editor.

LIBRARY TABLE.

Health, Wealth, and Wisdom. London: Methuen and Co. Pp. 212. Paper covers. Price 1*s.* net.—The names of the authors of this book are not given but we are told in a note that Part I.—that on Health—is by a "medical writer," presumably, therefore, by a medical man (but this, though implied, is not distinctly stated), and that Parts II. and III., those on Wealth and Wisdom, are written "by another hand." The first part is the one which would have naturally most appealed to us but the publishers directed our attention specially to the other two sections—possibly to divert us from the first, for who can fathom the thoughts of a publisher?—and by chance it happened that we first read the sections on wealth and wisdom. Now although the members of our profession excel in the latter quality they lack often wealth and on the whole probably the members of no profession, with the possible exception of the clerical, are more careless in matters of business. The part of this little book which refers to wealth is really very suggestive and quite entertaining. The wisdom of Solomon and the platitudes of the late Dr. Parker are here strung together with a lively commentary. The mistakes of Mr. Joseph Chamberlain of Birmingham, of Mr Seddon of New Zealand, and even of Rudyard Kipling himself are shown up impartially, and the teachings of Socrates and of the late Mr. Matthew Arnold are quoted and praised on occasion. There is a healthful and easy breeziness about the writing which is quite inspiring in a critical age and those who have the industry to read through this part of the book with the satisfaction of thinking they knew it all before will possibly not be able to say with equal assurance that they carry out all the maxims which it contains. They will admit that many well known facts have been brought before them in a new light and not a few may feel that if they did really know these things it would be the better if they had done them. Briefly, much good advice is pleasantly given. To the medical man the chapter on Health will be amusing rather than instructive. "A question that everyone should at times ask himself is, Am I healthy?" So the author teaches (p. 10) and everyone should ask himself, "Am I making the best of life?" However old or young you may be, says the writer, your health is not up to the mark if amongst other things you are "gloomy and depressed" or are "capricious in

temper" or have "uneasy feelings of any sort." In any such case you should consult a physician. "The question of cleanliness brings us face to face with the microbe" (p. 13). (This seems to demand illustration.) Concerning microbes, there is an improving conversation between the learned author and an old lady. *Apropos* of baths, the author introduces his own personality for which he observes he may be pardoned. We may pardon him because of his modesty. Having coughed up blood three weeks previously and being as "weak as a weasel" on a foggy December day he felt disinclined for a "cold tub." But his second self whispered that he was a Scot and he must not be afraid. "So the man stripped"—and here we may leave him. The industrious reader may learn from these pages that we must if we would be healthy have flowers in our bedrooms, but the same flowers should not be kept for more than a fortnight (p. 36); that cheese should be taken at the beginning, not at the end, of dinner (p. 42); that honey is a tonic (p. 53); and other strange things. Our bold Scot likes "to see a prettily dressed girl, even although she does tight lace a bit" (p. 37). "Half a tankard of good ale is preferable," he says, "to the best wine in the world" (p. 43). There is no indication as to the source of "the best wine in the world" or as to where the happy author found it. We ought not, perhaps, to assume that it is the "speck of Scotch" alluded to elsewhere in the book

Banks and their Customers: a Practical Guide for all who keep Banking Accounts from the Customer's Point of View. By HENRY WARREN. An entirely new and enlarged edition (the seventh). London: Effingham Wilson. 1904. Pp. 155. Price 2*s.* net.—Although many people have a banking account it is astonishing how little the average man knows about the banking business. That a book on this subject was wanted is abundantly proved by the fact that the present volume represents the seventh edition of one published by the author. We say represents, rather than is, the seventh edition because little remains of the original work and some of the chapters now printed for the first time are entirely new. It is certainly not too much to say that most people who have anything to do with bankers are sure to find in this volume a good many things which it is well for them to know and which will remove at once and for ever the undue respect which many of them have for moneymongers, to use the title bestowed upon them by Kinglake in "Eothen." Some of the customs of the trade seem hardly, according to the author, to commend themselves on the score of honesty. The chapter on Recent Bank Robberies is amusing as well as valuable and one on the Choice of a Banker will be found generally useful.

The Care of Infants. By Dr. SOPHIA JEX BLAKE. Second edition. Edinburgh: George A. Morton. London: Simpkin, Marshall, and Co., Limited. 1903. Pp. xiii.–109. Price 1*s.* net.—This is a little book written by a lady doctor for the benefit of mothers. The guiding principle which has actuated the authoress throughout her work has been that prevention is better than cure and doubtless much illness and subsequent disappointment would be avoided by mothers if even a fractional part of the very sensible advice offered in these pages was conscientiously followed. In Chapter I. the importance of breast-feeding is emphasised and the indiscriminate use of drugs is deprecated, and even the early dose of castor oil with which most children are ushered into the world is stigmatised as a meddlesome proceeding "which anticipates the gentle work of nature by an hour or two at the cost of gripes and cries." In those cases in which breast-feeding is inapplicable or impossible cow's milk, diluted with water and sweetened with sugar, is recommended and, further, for those cases in which casein is found to disagree it is suggested that the excess should be removed by the "Frankland method." This is an antiquated method and an unsatisfactory one because to insure the removal of the casein the milk has to stand for 12 hours and its natural qualities are further interfered with by artificial coagulation with rennet. Although we regard the authoress's condemnation of artificial foods for young infants as justified by experience we cannot agree with her that gruel made with fine oatmeal "is excellent" for infants of the age of five or six months. The indigestible cellulose which it necessarily contains exercises an irritating action on the bowel of older children not to speak of those of infants of such a tender age. A chapter is devoted to vaccination and its advantages are eloquently advocated. Another chapter is occupied with minor ailments of children with their appropriate treatment, which, by the way, is little concerned with drugs. Clothing and baths are also adequately described in independent chapters. "The Care of Infants" is a perfectly safe guide to put into the hands of young mothers and there is no encroachment on the just domain of the family medical adviser; indeed with the exception of certain recommendations for feeding we are in agreement with most of the advice which the authoress has incorporated in her very readable little book.

The Guide to South Africa, 1903–1904 Edition. Edited annually by A. SAMLER BROWN and G. GORDON BROWN for the Union Castle Mail Steamship Co., Limited. London: Sampson Low, Marston, and Co., Limited. Cape Town, Port Elizabeth, and Johannesburg: J. C. Juta and Co. Pp. 474. Price 2*s.* 6*d.*—This work, for the use of tourists, sportsmen, invalids, and settlers, contains a vast amount of information and many good maps. The historical chapters are most interesting reading but we see that an error to which we called attention in our review of the 1902–03 edition still remains. We refer to the passage on p. 260: 'Three species of ibis are found, including the sacred red ibis (ibis Æthiopica)." As we said before, the sacred ibis is not red but black and white. Moreover, the red ibis (eudocimus ruber) is only found in America. This mistake should be corrected.

JOURNALS AND MAGAZINES.

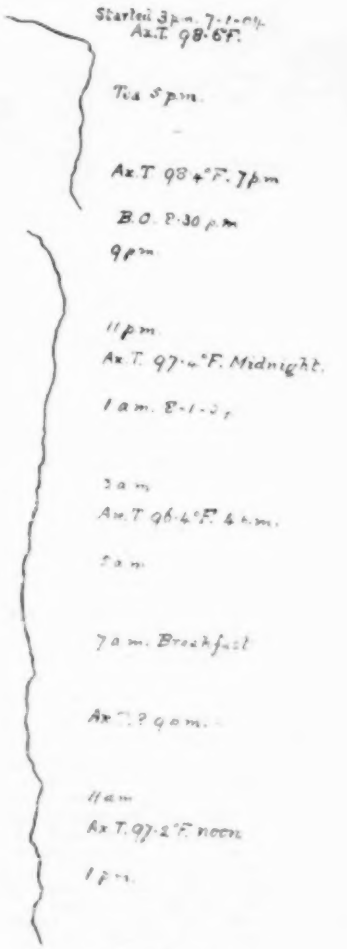
Technics.—This is a monthly magazine which Messrs. George Newnes of Southampton-street, Strand, London, W.C., have just commenced to publish. The first two numbers—i.e., those for January and February—contain articles which will be likely to interest many of our readers. The paper on the Diagrammatic Illustration of Class Lectures, of which Parts I. and II. have appeared, will supply useful hints for lecturers and authors of papers to be read before societies. The New Chemical and Physical Laboratories of the Royal College of Science, South Kensington, form the subject of articles by Professor W. A. Tilden and Sir Arthur Rücker. The Bacteriology of Brewing will be treated in a series of articles by Mr. James Grant, F.C.S., of which Part I. has appeared. A variety of electrical subjects are treated by well-known authorities on electrical physics, such as Professor W. H. Barrett, Mr. W. Brown, Mr. James Swinburne, Mr. H. M. Hobart, and others. Each of the first two parts contains rather more than 100 pages and is profusely illustrated.

THE GENERAL HOSPITAL, BIRMINGHAM.—On Feb. 12th a presentation was made to Dr. E. Malins by the governors of the hospital to commemorate his services of 25 years as the first obstetric officer to the institution. The subscribers were 152 in number with Sir John Holder as chairman. The memorial consisted of a stained glass window placed in the chapel of the hospital by the wish of Dr. Malins. There was in addition a valuable collection of silver plate with an illustrated bound copy of the resolution passed by the board on the resignation of Dr. Malins. The gift also included a gold brooch set with a large opal surrounded by diamonds for Mrs. Malins.

New Inventions.

THE PLATINUM THERMOMETER AND CALLENDAR ELECTRIC RECORDER FOR OBTAINING CONTINUOUS CLINICAL TEMPERATURE CHARTS.

HAPPENING to read some time ago of Professor Callendar's apparatus for obtaining continuous records of varying temperature, I conjectured that it might prove as useful for clinical work as it had done for scientific experiments and for factories. The Cambridge Scientific Instrument Company (Carlyle-road, Cambridge) was kind enough to lend me the apparatus and Dr. W. B. Warrington, of the Northern Hospital, Liverpool, very kindly placed his patients at my disposal for the trial, and I am now venturing to publish two complete 24-hour records of two cases. One was a



Case 1.—Hemiplegia.

case of granular kidney, cerebral hæmorrhage, and left hemiplegia, and the other was a rare case of osteo-arthropathy (probably tuberculous); the charts, however, are not given for any intrinsic interest but as examples of the utility and delicacy of the instrument in such work. So far as I can ascertain they are the first charts of the kind published, but I should add that, according to the Cambridge Scientific Instrument Company, Dr. C. H. Reissman, of the Middlesex Hospital, formerly made some experiments in the same line. I hope that Dr. Warrington will be able to continue the observations and believe that the apparatus is not only likely to prove clinically useful in many ways but may make interesting disclosures regarding the temperature both in health and in disease.

Case 2.—Osteo-arthropathy

The platinum thermometer employed is of about the size of an ordinary clinical thermometer and is connected by long flexible wires to the recorder. In the two cases mentioned it was kept in the rectum for the 24 hours, the recorder being placed on a table at the bedside. Within the recorder a style charged with ink inscribes the temperature of the rectum on a chart fixed to a cylinder which revolves by clockwork once during the period. The nurses in charge of the cases made pencil notes from time to time on the same chart in a line with the style, regarding the axilla temperature (taken by an ordinary thermometer), the meals, and so on, being careful to record also the time at which the note was made. This process enables us to dispense with the previous standardising which would otherwise be necessary and also serves as a check. It will be observed that the record is interrupted when the bowels acted, the thermometer taking some time to become warm again after removal. The delicacy of the instrument is demonstrated by

the wide amplitude of the curve, even with such small fluctuations (amounting only to about 2° F.) as occurred in the cases.

The Cambridge Scientific Instrument Company has also supplied a thermometer for use in the axilla. The clockwork cylinder can be made to revolve more rapidly than once a day. Of course, the charts here given are reduced in size, the actual dimensions being 12½ by 8½ inches. Too great a correspondence between the records of the nurses and of the instrument must not be expected.

RONALD ROSS, C.B., F.R.C.S. Eng., F.R.S.,
Professor of Tropical Medicine, University of Liverpool.

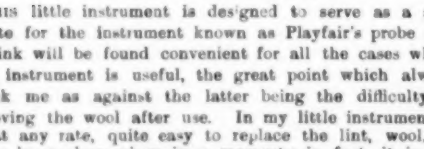
A TRIPLE-WICK CANDLE.

AT a patient's house it is generally difficult, and often impossible, to obtain a suitable light for making observations. This is especially the case when a light for the ophthalmoscope is needed. An ordinary electric lamp simply gives the image of the incandescent wire on the retina unless the lamp glass is ground to a degree that dims the light. A common candle throws only its own small image on the fundus. Every efficient portable electric lamp is heavy and uncertain in its action, and the best lamp of all—a paraffin lamp with a broad wick—is not only cumbersome but soils whatever is near it to a degree that is at last insupportable. A serviceable light I have often obtained by cutting away with a knife one side of two pieces of candle, so as to bring their wicks near enough together for the flames to blend. This suggested the idea of a three-candle wick. After a good many trials the most serviceable is found to be a wax candle, oval in section, 1¾ inches wide, with the three wicks a quarter of an inch apart. The flames of these blend, forming a flat flame ¾ths of an inch wide, which is a practically adequate illumination. Experiment shows that the light is steadier and better without any form of chimney or lantern. The oval candle (as supplied) is inclosed in a tin tube of corresponding size and shape, with tubular caps to fit on each end to prevent the tops of the wicks being broken. The "wax" is hard and soon sets after the flame has been blown out or extinguished by the cap. The metal casing prevents any "guttering," and the candle when burned down can easily be pushed up from the lower end by the fingers. The dimensions of the outer case are 5 inches long, 1½ inches wide, and ¾ths of an inch thick, a sufficiently small size to prevent consciousness of its presence in the pocket. It is made by Hawksley, 357, Oxford-street, London, W. If a condensed light is desired it can be obtained by a lens on a rod hinged to a metal band to slip over the case.

Queen Anne-street, W. W. R. GOWERS, M.D. Lond.

UTERINE "FLAG MOP."

THIS little instrument is designed to serve as a substitute for the instrument known as Playfair's probe and I think will be found convenient for all the cases where that instrument is useful, the great point which always struck me as against the latter being the difficulty of removing the wool after use. In my little instrument it is, at any rate, quite easy to replace the lint, wool, or gauze by a clean piece in a moment; in fact, it is the application of the principle of ordinary sponge-holder to an instrument which is intended to be used in cleaning out or making applications to the interior of cavities for which the ordinary sponge-holder is too bulky. The instrument has been made for me by Messrs. Reynolds and Branson of Leeds in aluminium, and either strips of lint or pieces of bandage or ribbon gauze can be used with it very conveniently, and these may be inserted either in the form of a

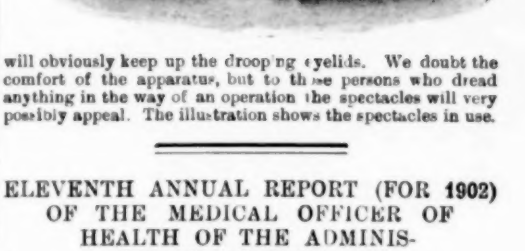


broad strip placed between the serrated portion, so that the metal grips the material like the midrib of a leaf, or by the edge, so as to make a flag. Turning the instrument round in the hand the material is easily rolled around to make a convenient mop, and is equally easily undone and replaced when soiled by use. If it is thought advisable to protect the tip of the instrument (which, however, is blunt), a narrow strip of gauze or lint can be inserted between the serrations near the top, carried over the top, and then wound spirally round as in bandaging a finger, and fastened off where required by the moveable collar, which brings the serrated surfaces together. The instrument is sufficiently rigid for use, but can be bent in easy curves to suit the shape of the uterus or any other cavity; and as there is a little projection at two and a half inches from the point it can be used as an ordinary uterine sound if desired.

Harrogate. E. SOLLY, M.B. Lond., F.R.C.S. Eng.

SPECTACLE FRAMES FOR PTOSIS.

Messrs. W. F. Stanley and Co. of Railway-approach, London-bridge, have sent us a spectacle frame intended for the relief of ptosis without operation. To the upper borders of the lens frames are fitted small spring supports which



will obviously keep up the drooping eyelids. We doubt the comfort of the apparatus, but to those persons who dread anything in the way of an operation the spectacles will very possibly appeal. The illustration shows the spectacles in use.

ELEVENTH ANNUAL REPORT (FOR 1902) OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

III.[1]

AMONG the official publications of medical officers of health Mr. Shirley Murphy's present report is quite exceptional in this respect, that it contains particulars of the behaviour of chicken-pox in a vast urban community side by side with those of a concurrent epidemic of small-pox. We have previously learnt that in the early days of the recent epidemic the spread of small-pox in London was accelerated by the circumstance that in some cases there had been failure to distinguish between chicken-pox and small-pox. Accordingly the Council, acting on the advice of the medical officer of health, most prudently resolved to require the compulsory notification of chicken pox to the local sanitary authorities of the metropolis under the provisions of the Public Health Act. Although the primary object of this expedient was obviously the arrest of small-pox, it nevertheless incidentally enabled Mr. Shirley Murphy to prepare unique statistics concerning not less than 25,000 cases of varicella, and these he has analysed with every needful detail, not only with regard to the age and sex incidence of the attacks but also with regard to their distribution in relation to locality and to time. It is common knowledge that varicella is but rarely a fatal disease. At any rate, only a few deaths annually have been attributed to this cause in the returns of Somerset House and probably most of these have really been cases of unrecognised small-pox. Considerations of space prevent our

[1] Nos. I. and II. were published in THE LANCET of Feb. 6th (p. 385 and 13th (p. 466), 1904, respectively.

following Mr. Shirley Murphy, as we should have liked to do, in his careful and lucid examination of the local incidence of varicella. We would, however, especially direct the attention of the profession to this portion of his report, feeling assured that it will be found interesting and helpful to busy practitioners in their treatment of what is sometimes a very perplexing complication of graver diseases.

Measles in 1902 appears to have been somewhat less fatal than usual in London, accounting for the deaths of 51 per 100,000 of the population at all ages, as compared with 58, the average rate in the preceding ten years. In the metropolis it was more fatal in 1902 than in any of the great English towns except Bristol, Bradford, Hull, Salford, and Newcastle. Measles mortality is important mainly in early childhood, for more than nine-tenths of the deaths occur at ages under five years. Above this age the deaths from this disease in London are less than 150 a year on the average. Ignorance among parents concerning the infectiousness of measles and their unwillingness or inability to take the necessary precautions are the chief causes of the almost universal prevalence of the disease; and the fact of its high infectiveness for about three days before the rash militates greatly against the success of public efforts to limit its spread. Varying temporary success has attended the action of local medical officers of health in excluding possibly infective children from school. In spite of every precaution the disease in London recurs with increasing severity every two or three years, attacking the susceptible children who have accumulated in the intervals. "It is not probable," says Mr. Shirley Murphy, "that efforts made to limit the spread of measles will do more than postpone the age of attack, but it may be expected if this result can be attained that the mortality of measles would be diminished." The County Council has, with the consent of the Local Government Board, applied to measles those sections of the Public Health Act which prohibit the exposure of infected persons and things and their transmission from place to place without reasonable precautions and also those sections which provide for the disinfection of houses and clothing and for the disposal of bodies dead of dangerous infectious diseases. The county medical officer suggests the trial, at any rate, of hospital accommodation as a means of checking the present excessive mortality of measles. Pulmonary diseases are well known to be the most frequent and fatal of the complications occurring in measles—complications, moreover, against which the poor have the least adequate means of contending. It is therefore worthy of consideration whether the hospital treatment of measles cases should not be tried, on a limited scale, with a view of testing its value in reducing the fatality of the severer attacks of that disease.

Scarlet fever in London does not appear to have varied greatly, either in prevalence or in fatality, during the last two years. But if the last decade be compared with the first decade included in the table—namely, that terminating with 1868—the mortality to which it gave rise is seen to have decreased enormously. Diagram IX. in the present report shows this clearly. Thus, the mortality in the ten years 1859-68 is shown to have ranged from 10 per cent. below to as much as 235 per cent. above the mean rate for the whole period, whilst in the ten-year period just completed it has fallen from 30 per cent. below to 85 per cent. below the mean. The incidence of reported attacks is well shown in Diagram XI. which gives the relative incidence of scarlet fever cases in each month since 1891, the first year in which notification in London was compulsory. Taking the first quinquennium after this year it is seen that the reported cases were in the proportion of 5·9 per 1000 of the population at all ages, whilst in the more recent quinquennium the proportion fell to 3·8 per 1000. It is further to be noted as a probable factor of this decrease that since 1890 the admissions for scarlet fever to the hospitals of the Metropolitan Asylums Board have steadily increased from 40 per cent. to 78 per cent. of the total cases known to have occurred in the metropolis. In 1902 scarlet fever mortality was lower in London than in any of the great English towns except Leeds, Nottingham, Hull, and Leicester, but it was higher than in any of the chief continental and foreign towns except St. Petersburg, Berlin, Vienna, and New York.

In regard to the preventive efforts of the County Council respecting scarlet fever we notice with regret that although in 1902 that authority sought to obtain parliamentary authority for prohibiting the distribution of infected milk in the metropolis, including the right to require from milk vendors lists of their customers and information as to the source of their milk, nevertheless, these powers were rejected by Parliament, so that a highly important measure, obviously necessary for the protection of the people of London against infectious disease, is still wanting.

During the last four years there has been in London a steady decline in the fatality of diphtheria as compared with its average in the four years immediately preceding—a decrease represented by a fall in the average death-rate of more than one-third. It is further worthy of note that during the last 12 years there has been also a decline in the *case mortality* of this disease, the mortality among the notified attacks having fallen from 22·5 per cent. in 1891 to 10 per cent. in 1902. In the year 1902 diphtheria was less fatal in London than in any of the great English towns except Manchester, Birmingham, Leeds, Nottingham, Leicester, and Newcastle-on-Tyne, whilst if the figures are to be trusted it was more fatal in London than in any of the chief foreign and continental towns except Paris, St. Petersburg, Vienna, and New York.

Typhus as an endemic disease has now practically ceased to trouble us in London, although it still continues to "breed true" in parts of Ireland and occasional cases of the disease are from time to time imported thence into certain parts of this country. Not many years ago typhus was, perhaps, next to small-pox, the most dreaded pestilence that infested the slums of our great commercial centres and we well remember the time when it contributed almost as largely as enteric fever to the death toll of the metropolis. But now, happily, this is no longer true; in the year 1902 not a single death was attributed to typhus and the death-rate therefrom in the last ten years has averaged less than 1 per 1,000,000 of the population. The virtual extermination of typhus is doubtless peculiarly gratifying to the county medical officer of health who in past years, both in the fever hospital and in the slums, devoted so much personal attention to the study and prevention of that disease.

Enteric fever has occurred in London during the last two years in the proportion of 70 per 100,000 of the population. If the period since 1869 be divided into two portions it will be seen by Diagram XVII. that in the first half of that period—viz., from 1869 to 1884—the death-rate from that disease was almost constantly above the mean for the whole period, whilst since 1884 it has been as constantly below it. A careful study of this chart will show this clearly. What is peculiar in the history of enteric fever in 1902 is the fact of its abnormal distribution with respect to time. Thus Diagram XVIII. shows that whilst the duration of excessive enteric fever prevalence extends normally from the thirty-fourth to the fifty-first week of the year, in 1902 that period began as early as the twenty-fifth week, exceptional prevalence being noted in the twenty-ninth and thirtieth weeks of that year. This increase was not limited to any one locality but was widely distributed throughout London. In discussing the causes of enteric fever in London the subject most frequently referred to by local medical officers of health is that of infection from the consumption of shell-fish. Large quantities of such food, especially cockles, came to London from the neighbourhood of Southend and many London inhabitants visited that resort during the summer months, some for a single day and others for longer periods, many of them partaking of shell fish during their stay. "There is no reason for doubting," says Mr. Shirley Murphy, "that many cases of enteric fever in London were caused in this way, and it is highly probable that the consumption of shell-fish from other places had a similar result."

In view of the foregoing experience it is satisfactory to note that the County Council has memorialised the Local Government Board, expressing the Council's hope that, in the interests of the public health, the Board will as soon as possible take steps to amend the law so as to prohibit the laying down of shell-fish in sewage-polluted creeks, &c., and to prohibit the sale of such shell-fish for human consumption; it also asks that all unpolluted layings, fattening beds, and storage ponds at present in use may be protected from pollution by any person or any sanitary authority. As this subject is now under consideration by the Royal Commission on Sewage Disposal we may hope that suitable legislative measures will be adopted by the Government for the protection of an important source of food supply.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 27, 1904.

War Office Changes.

As our readers, in common with the rest of the world, are aware a great scheme of army reform is in process of being carried out. Sweeping changes have been recently introduced and many are still impending in the organisation of the army, in the remodelling of the War Office, and in the readjustment of its machinery. It is a matter of vital importance that what is now being done should, to every possible extent, meet all present and future requirements and should have some guarantee of permanence about it. We wish that we could predict that such is likely to be the case, so far as the efficiency of the medical service and the medical and sanitary needs of the army are concerned; but, on the contrary, we cannot help feeling that the country is threatened with a distinctly retrograde movement by which constantly recurring evils and causes of public complaint are more likely to become stereotyped than removed. It will be intolerable if no well-grounded attempt is now made to obviate the scandals which, whether real or only alleged, have arisen out of so many of our wars from the time of the Crimea (when army sanitation was comparatively unknown) up to the date of the recent protracted struggle in South Africa. The facts connected with the late war are still fresh in the public mind, while the allegations made regarding the medical service in the Egyptian expedition of 1882, which on full official inquiry were shown to have been either unfounded or exaggerated, have not yet passed into oblivion. It will be remembered that as the result of the recent reforms in the Army Medical Service, which were mainly attributable to the South African war, we were able to congratulate the army and the medical profession on the improvements and changes that had taken place in the Medical Department. The influential official position which the head of the Army Medical Service as the representative of that service was for the first time to hold in connexion with the Government, the War Office, and the military authorities we regarded as a very notable feature. Quite recently, however, in announcing the names of the members of the newly constituted Army Council[1] we had to allude to the fact that the head of the Army Medical Service had no place on that council; and we would refer our readers to our remarks on the subject. We repeat what we there said that it is, in our opinion, absolutely essential in the interests of the army that the medical service should be represented adequately and prominently in the councils of the War Office. We are therefore glad to see that the British Medical Association has brought the subject to the notice of the Secretary of State for War who will assuredly have to declare his intentions and to justify them to the satisfaction of the House of Commons. It is not a question of mere medical sentiment or military detail; it is a matter of national interest that the medical service should not be relegated to some indirect and subordinate position but should occupy a place worthy of its grave and important responsibilities, such as Mr. BRODRICK rightly gave to it. The difficulties with which the Army Medical Service has always had to contend have largely arisen from the fact that responsibility and power have hitherto borne no relation to one another among the heads of the department. The late War Minister made a real attempt to rectify this unfortunate position by putting the head of the Army Medical Service in a situation at the War Office, where he could make the wants of his service directly known to those who could supply them. And now Mr. ARNOLD-FORSTER proposes to undo the work of his immediate predecessor in office in order to return to an obsolete state of things which has not stood the test of experience but has been already tried and discarded because found wanting. With the results and findings embodied in the report of the Royal Commission on the War in South Africa and the report on the Care and Treatment of the Sick and Wounded in the South African Campaign still fresh in our memories we cannot shut our eyes to the evils of unpreparedness with regard to medical and sanitary matters in war. But that is what Mr. ARNOLD-FORSTER will risk for the country.

[1] Vide THE LANCET, Feb. 13th, p. 462, and Feb. 20th, p. 538.

The After-Care Association.

THE After-Care Association, as is now well known, is a body which devotes itself to the well-being of poor persons discharged recovered from asylums for the insane and it had the good fortune to hold its annual meeting on Feb. 11th under the chairmanship and hospitality of the Bishop of LONDON who is one of the vice-presidents. His Lordship, in his opening remarks, said truly that the work of such an association appealed more or less directly to every member of the community as it was impossible to avoid some personal knowledge of the distressing effects produced by disease and derangement of the mind upon acquaintances, friends, or relatives.

The chief objects of the association are to facilitate the readmission of poor persons, who have been discharged as recovered from asylums, into social life: (1) by obtaining for them when needful an interval of change of scene and air, often so beneficial on recovery from ordinary sickness, by boarding them out in the country in cottages under proper care and supervision; (2) by giving them grants of money and clothing; and (3) by assisting them to obtain suitable employment. Surely no philanthropic scheme could be more worthy or more commendable and the council of the association is able to state in its annual report for 1903 that the work of the year has again been very encouraging and that the proportion of cases successfully started in life has increased, while the accounts which have been received of those helped in past years are satisfactory. The report goes on to say that during the year 250 cases had been before the council; of these, 155 were women and 95 were men. All cases, we are told, are thoroughly investigated by the officers of the association previously to being brought before the council and,

where possible, all employers are interviewed. Sometimes as many as 20 or more visits have been made by a member of the staff in connexion with a single case. This means a very considerable expenditure of time and money but the council "has been well repaid for this work by the most satisfactory manner in which a very large majority have retained the situations found for them." To carry out this work the total amount of subscriptions, donations, and contributions for maintenance for the year came to £648. If we take the figures roughly as an estimate of income and work done it means on the average an expenditure of 50s. for each case which came up for consideration and which, if not actually maintained for a period or assisted pecuniarily in some way, had to be investigated as to its merits and circumstances. Considering the number and variety of claims upon the finances of the association it appears to us that this expenditure is not only moderate in itself but is also a testimony to the importance and significance of the services, gratuitous and otherwise, of the members of the council and their fellow workers. But bearing in mind the fact that the association has been in existence for some 20 years or more we are bound to say that, in our opinion, this income, which is necessarily the measure of the association's capacity for carrying out its beneficent work, is far from being commensurate either with the requirements of the class of "poor persons" under consideration or with a reasonable manifestation of philanthropy on the part of a responsible public community.

A glance at the last report of the Commissioners in Lunacy shows that on Jan. 1st, 1903, the pauper insane, or, as some prefer it, the rate-supported insane, in England and Wales numbered 103,794 and we are certainly not overstating the case if we say that 6000 or 7000 patients of this class are discharged as "recovered" every year. But of the number thus discharged as no longer requiring the immediate care and supervision of an asylum, how many are so far recovered as to be able at once to cope successfully with the buffetings and storm and stress of social and domestic life and to obtain suitable employment? In the absence of statistics on the point we may, at all events, reckon that at least one-half need the temporary help of an organisation like the After-Care Association if the best opportunities are to be secured to them of remaining well, of acquiring increased mental stability and confidence, and of warding off the risks of relapse. The 250 cases which, as we have said, came before the council during 1903 represent less than one-tenth of the work which the association, if it had the means, would be able to carry out. In other words, the After-Care Association ought to be placed in such a position financially as to enable it year by year to lend a helping hand to 2500 poor persons discharged recovered from lunatic asylums. This is the lowest estimate possible of the number of persons requiring such services as the association offers. The feeling expressed at the largely attended annual meeting at London House was strongly in favour of strenuous efforts for making the association and its work more widely known to the public and thereby increasing the number of members and workers as well as of private benefactors and subscribers. The development of self-supporting provincial branches to work locally in connexion with the parent association is necessary, while it is proposed to endeavour to obtain grants from public funds. There is every reason why public funds should contribute to the advancement of this particular sort of work, for, apart from physiological and hygienic considerations, it must not be forgotten that the present congested condition of our county and borough asylums necessitates or brings about in many cases a somewhat premature discharge on recovery, thereby handicapping the individuals so discharged in their struggle for existence and leading to an increase in the number of relapses and re-admissions. In this relation it is interesting to learn from Sir JOHN BATTY TUKE, M.P., who seconded the adoption of the report, that he intends at an early date to ask Parliament for the appointment of a commission of inquiry into the lunacy administration of the country with a view to strengthen the hands of the officials in dealing with what he regards as the two blots of that administration—namely, the defective arrangements as to the early care and management of incipient cases of insanity and the want of provision for the proper after-care of persons discharged recovered from asylums.

The patroness of the association is H.R.H. Princess CHRISTIAN and the Earl of MEATH is the president. The Archbishop of CANTERBURY and the Archbishop of YORK are among its vice-presidents and practical support and personal encouragement are given to its work by the Commissioners in Lunacy and many other official and private workers of standing and experience in the lunacy world. The offices of the association are at Church House, Dean's-yard, Westminster, and Mr. H. THORNHILL ROXBY is the secretary. There is no other society of the kind in the United Kingdom and, as we have endeavoured to point out, its objects are both extensive and urgent and fully deserving of the practical benevolence of the charitably disposed public.

The Sale of Poisons.

SEVERAL recent occurrences are likely to cause anxious inquiries whether any steps can be taken to check the self-administration of poison under conditions of despair and it is highly probable that the matter is one which will in some form be brought under the attention of the Government at an early date. Notwithstanding the thoughtful care which resulted in the construction of the Act which regulates the sale of poisons by chemists and druggists there can be no doubt that at the present time there are abundant facilities for the acquisition and employment of large quantities of poisonous substances. Numerous attempts have been made to introduce and to enforce restrictions which would impede the purchase of poisons for unlawful purposes. The general desire has been to afford protection against homicide and the precautions which have been suggested and acted upon tend to facilitate legal investigations by supplying records of the sale of poisons to individuals who can readily be traced. The various steps which have been taken in the interest of public welfare are instructive, since they demonstrate the ardent desire to exert control, and they also show that this desire has been

hampered and rendered ineffective by a respect for vested interests and by the frequency with which poisonous substances are largely employed for legitimate purposes. In 1868 an Act to regulate the sale of poisons and to alter and to amend the Pharmacy Act of 1852 gave the Pharmaceutical Society the power to draft regulations for keeping, dispensing, and selling certain poisons which were enumerated in a schedule. It was further declared to "be unlawful for any person to sell or to keep open shop for retailing, dispensing, or compounding poisons unless such person shall be a pharmaceutical chemist or a chemist and druggist within the meaning of the Act." A little later in the Act came the list of exceptions which has done so much harm indirectly by facilitating the sale of poisons. Clause xvi. states that "nothing hereinbefore contained shall extend to or interfere with the business of any legally qualified apothecary or of any Member of the Royal College of Veterinary Surgeons of Great Britain, nor with the making or dealing in patent medicines, nor with the business of wholesale dealers in supplying poisons in the ordinary course of wholesale dealing." This clause is probably to blame for many of the "accidents" which occur. Many examples could be quoted of poisons which have been procured under the plea of a desire to destroy animals. Our coroners' courts also afford frequent evidence of the dangers resulting from patent medicines which constitute a grave source of risk when improperly employed through ignorance or design. Many of these must be labeled "poison" on account of the presence of opium or of one of its active ingredients but this label does not check the sale of various nostrums which are largely advertised by leaflets and in the daily press.

The schedules drafted in 1868 have from time to time been extended to include additional drugs and preparations; sometimes these seemed to be necessitated by the introduction of new drugs and occasionally perhaps by some recent event attracting attention to an oversight. The last important addition was the inclusion in 1900 of "liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances" amongst the list of poisons within the meaning of the Pharmacy Act, 1868. When sold for all ordinary purposes these preparations must now bear the name of the article, the word "Poison," and the name and address of the seller. Lest these restrictions should hinder the use of these substances, exemptions are granted for "any preparation prepared for use as sheep-wash, or for any other purpose in connexion with agriculture or horticulture, and contained in a closed vessel, distinctly labeled with the word 'Poisonous,' the name and address of the seller, and a notice of the agricultural or horticultural purpose for which the preparation has been prepared." In spite of precautions carbolic acid still has to be credited with being the poison most commonly employed with suicidal intent and in addition with the responsibility of a relatively large number of accidental deaths. Classified lists of cases of poisoning afford very curious reading since they show that there is usually a reckless disregard for a period of intense suffering or an ignorance of the amount of pain likely to ensue. The poisons most commonly used are carbolic acid, spirit of salts, and oxalic acid, and they are probably selected because they are readily at hand, having been legitimately purchased some time previously for necessary work. The great difficulty which hinders any effective legislation lies in the frequency with which poisons are necessarily used for various purposes in the arts and in commerce. Every photographer and every entomologist is probably in possession of an abundance of poison and in the engrossing preoccupation demanded by his work it may well be doubted whether care is always taken to surround these substances with the vigilant precautions necessary to prevent abstraction for improper purposes.

We need not refer in detail to the statutory requirements connected with the dispensing and retailing of poisons. The regulations have been carefully constructed and generally they afford adequate protection against improper purchase of poison, although they can be evaded by false declaration of the "purpose for which it is stated to be required." All such provisions can be set at naught by the purchase of proprietary preparations or of compressed drugs intended to procure sleep or by the acquisition of small quantities of sedatives procured from several establishments. This last method is often facilitated by the possession of an old prescription and by the absence of a record, stamped upon it, of the dates upon which it has been compounded. This small precaution might prevent many regrettable incidents and it would appear to involve less trouble than the insertion of the lengthy index reference to the druggist's book in which a copy of the prescription will be found duly dated and numbered. In spite of all attempts to surround the sale of poisons with regulations designed to check their purchase with homicidal or suicidal intent the legitimate use of poisons appears to be so widespread that the framing of further restrictions is attended with very great difficulty.

A Chemical Conception of the Ether.

Two distinct schools of thought in regard to the nature of the ether would appear to have arisen out of the discovery of radium in particular and of radio-activity in general. That there is a certain amount of antagonism between the views respectively held is natural enough but we should not be surprised if subsequent developments showed that a compromise will ensue and that time will prove that both schools are, after all, increasing our chances of arriving at a solution of the mystery. We still have amongst us the adherents of the emission theory of light as opposed to the wave theory, and, indeed, the ranks of the former have been decidedly strengthened since the discovery of radio-activity. What may be considered as the orthodox view of radio-activity is that which seeks explanation in the subdivision of the atom into infinitely smaller particles, the electrons. This conception of the atom that it is composed of a cluster has become so clear in the minds of many that already the phenomena of a screen fluorescing under the action of radium is spoken of as a bombardment of electrons. The atom of radium is, so to speak, in a state of disruption, its electrons are projected with enormous velocity, giving rise to the phenomena of light and heat. What Sir WILLIAM CROOKES described some years ago as radiant matter or a fourth state of

matter is now made more intelligible, according to one school, by the electron theory and since the electron is the embodiment of an electric discharge we would appear to be in the presence of a phenomenon at one time manifesting itself as matter and at another as force. Thus the borderland between matter and energy would seem to have been broken down. The theory of electrons amounts to a return to the emission theory, which disregards the notion of the transmission of luminous vibrations through an etherial medium. The origin of the emanations of radium is still a mystery, but we may here recall the view that this display of energy is due to the power which radium has of absorbing unknown energies in space and yielding them again in a form within human perception. This is the wave theory as opposed to the emission or electron theory of radium's activity. The wave theory does not necessarily depend upon the assumption that ether consists merely of a subtle highly elastic fluid or medium capable of transmitting vibrations with an enormous velocity. On the contrary, attempts have already been made to found a chemical theory of ether and in this direction the conceptions of MENDELÉEFF, the great Russian chemist who was the first to perceive the beauty, order, and importance of the periodic law of the chemical elements, are of the highest interest.

In a masterly essay recently published[1] upon the subject MENDELÉEFF suggests that the ether is a gas which, like helion or argon, is incapable of chemical combination. The recognition of the ether as a gas assumes, of course, that it belongs to the category of the ordinary physical states of matter, gaseous, liquid, and solid. "It does not require," he says, "the recognition of a peculiar fourth state of matter beyond the human understanding (CROOKES)" and "all mystical spiritual ideas about ether disappear." MENDELÉEFF thus clearly takes the realistic view and it is not to be expected that his attitude would be without the support of well-ascertained facts. His reasoning on the face of it is most cogent. He recognises, in spite of the enormous penetrative power of ether which enables it to pass through every envelope, that it would be impossible to determine experimentally its mass in a given amount of other substances; therefore he speaks not of the imponderability of ether but of the impossibility of weighing it. In short, his propositions are: (1) that the ether is the lightest ultimate gas and is endowed with a high penetrating power which signifies that its particles have, relatively to other gases, small weight and extremely high velocity; and (2) that ether is a simple body or element incapable of entering into combination or reaction with other elements or compounds although capable of penetrating their substance, just as helion, argon, and their analogues are soluble in water and other liquids. He even proposes to place ether as an element in the periodic system at the top of the series of elements known as the zero group which comprises helion, neon, krypton, and zenon. The existence of elements lighter than hydrogen is highly probable because the hydrogen group is preceded by the zero group containing elements of less atomic weight according to the classification. On abundant reasoning MENDELÉEFF gives the first element in his series as "x," the second as "y" to the discovery of which he now looks forward, and the third element in the group is helion. He then clearly anticipates what would be the atomic weight, density, and properties of "x" and "y." He assigns to "x," the ether, an atomic weight of nearly one-millionth that of hydrogen, travelling at a velocity of about 2250 kilometres per second. He thus regards ether as the lightest of all the elements both in density and atomic weight, as the most mobile gas, as the element least prone to enter into combination with other atoms, and as an all-permeating and penetrating substance.

Bearing these properties in mind uranium, thorium, and radium (the elements possessing the highest atomic weights) may be looked upon, according to MENDELÉEFF, as suns "endowed with the highest degree of that individualised attractive capacity, a mean between gravity and chemical affinity, which is seen in the absorption of gases and in the phenomena of solution." According to this conception the substance of the ether or gas must naturally accumulate from all parts of the universe towards the medium or mass of the sun just as the gases of the atmosphere accumulate in a drop of water. And the lightest of gases "x" will also accumulate about the heaviest atoms of uranium and thorium and radium and perhaps change its form of motion like a gas dissolved in a liquid. If, however, such a special accumulation of ether atoms about the molecules of uranium and thorium be admissible it seems to us that these elements ought to exhibit radio-activity to the same degree, whereas radium is several thousand times more active than is thorium or uranium, though its atomic weight is not very different. The well-known experiment which shows how readily the emanations from radium affect substances as soon as its salt is placed in communication with them appeals to MENDELÉEFF as "an emissive flow of something material from the radio-active substance and in a sense seems comprehensible if we assume that a peculiar rarefied ether gas capable of exciting luminous vibrations enters and passes off from the radio-active substance." The equilibrium of the ether atoms, it is suggested, may be destroyed in the case of the radio-active bodies by the "massiveness" of the atoms of uranium and thorium, "just as the luminosity of the sun may be, I think, due to its great mass being able to accumulate ether in far larger quantities than the planets." We fail to see how "massiveness" can be a factor in the way described, since the degree of radio-activity of these three elements differs enormously. In further support of his chemical conception of the ether MENDELÉEFF places a remarkable interpretation upon the phenomena proceeding at excessively low temperatures, at which the phosphorescence of many substances, and especially of paraffin, becomes more intense at the temperature of liquid air. His explanation is that paraffin and such like substances have a great capacity for condensing the atoms of ether at very low temperatures—in other words, the solubility or absorption of the ether in some bodies increases in extreme cold. According to this view phosphorescence in these circumstances becomes more intense, for the vibrations of light are then set up in the phosphorescent substances, not only by their own atoms but also by the atoms of ether which condense in these

[1] A Chemical Conception of the Ether. By Professor D. Mendeléeff. London: Longmans, Green, and Co. 1904.

bodies and start a rapid state of interchange with the surrounding medium.

To sum up, it is clear that MENDELEEFF adopts a distinctly realistic and charmingly simple view of the ether and we cannot but admire the ingenuity with which this great master of chemical science has marshalled so many facts in favour of his conceptions. All scientific men will listen with the greatest respect to the teaching of the elaborator of the periodic law, though they may not agree with him, that ether is a highly penetrative and an elastic gas, a real chemical entity which is at the bottom of the marvellous phenomenon of radio-activity. It is a bold thing to maintain against a powerful school containing men such as CROOKES, RAMSAY, LODGE, LOCKYER, SODDY, and RUTHERFORD that any conception of the division of the atoms into electrons is contrary to the scientific teaching of the present day. Yet that is what MENDELEEFF confesses to be his attitude until "some one demonstrates either the actual transformation of ordinary matter into ether, or the reverse, or else the transformation of one element into another." It will be interesting to see, now that helion has been shown to appear as a product of radio-activity and of the slow breaking down of radium, how far the eminent Russian philosopher will consider it expedient to modify his tenets.

Annotations.

"Ne quid nimis."

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

WE published in our issue of Feb. 6th, p. 377, a brief account of this association which has now got seriously to work. In view of the approaching London County Council elections on March 5th all medical men whose work lies in the metropolis are invited to send in their names as soon as possible to the honorary secretary of the association, Dr. Arthur W. James, 69, Gloucester-terrace, Hyde Park, W. In this way candidates for municipal honours may see that the medical profession in London is of one mind as regards the necessity of the Council providing an efficient street ambulance service for London. Medical men joining the association will find themselves in good professional company. Several hundred members have already been enrolled, amongst them being the President and many of the Council of the Royal College of Physicians of London; the President, an Ex-President, two Vice-Presidents, and 16 members of the Council of the Royal College of Surgeons of England; the Vice-Chancellor of the University of London, and members of the staffs of all the London hospitals, among whom may be mentioned Sir Thomas Barlow, Sir T. Lauder Brunton, Sir William H. Bennett, Sir Alfred Cooper, Sir Anderson Critchett, Sir R. Douglas Powell, Sir E. Cooper Perry, and Sir Thomas Smith. The Metropolitan Street Ambulance Association has already sent a communication on this subject to every county council candidate, inclosing a post-card for a reply to the following question: "If elected to the London County Council will you interest yourself in securing the establishment by the Council of an efficient street ambulance service for London?" A great many satisfactory answers have been received and it appears certain that candidates will do what is wanted if the medical profession will point out to them the urgency of the matter. Neither those responsible for the local government of the metropolis nor the London public understand that our enormous capital has virtually no ambulance provision whatever. There are certain ambulances generously placed by Mr. H. L. Bischoffsheim at the public disposal, the police have a few stretchers, and the St. John Ambulance Association a few litters at its stations; but considering the population concerned there is virtually no provision in London for the rapid and safe conveyance of the victims of street accidents to the hospitals. The chances that a man with, say, a broken leg will reach a hospital in grievous anguish and at considerable risk of increased damage in a four-wheeled cab are very great, and this example alone is sufficient to bring before medical men the importance of a systematised scheme for supplying London with ambulances. We advise our readers to follow the example of the presidents of the Royal Colleges and other prominent members of the medical profession and to join the Metropolitan Street Ambulance Association.

THE VENTILATION OF RAILWAY TUNNELS.

A SERIES of articles on the advantages of the Saccardo system of ventilating railway tunnels has recently appeared in successive numbers of the *Engineer*, commencing with that of Jan. 15th. The difficulties presented by atmospheric vitiation in tunnels are exemplified by the conditions which accompanied increase of traffic in that of the St. Gothard. The difference of ordinary atmospheric pressure prevailing at opposite extremities of this tunnel usually suffices to create a decided natural draught throughout its length and for the first one and a half years during which the trains were run it was supposed that natural ventilation would be sufficient. Even when it had been for nearly eight years open for traffic—namely, in March, 1889—the chief engineer stated in a report that there existed at all times a natural air current so that, although the tunnel employés and trainmen were affected by the smoke, the vitiation of the air did not prevent them from working. At that time there were about 42 trains a day but when more trains were put on the air became worse. In the summer of 1897 there were 61 trains a day. Moreover, from the middle of September, 1897, up to the end of the year the atmospheric pressure at both ends of the tunnel was so nearly alike that the smoke from the locomotives simply remained in the tunnel without escaping by either entrance owing to the feebleness of the natural ventilation. The atmosphere then became injurious to the tunnel employés and the number of trains had to be reduced till the air was rendered just tolerable. The trainmen also were inconvenienced by the fumes, although their suffocation never went to the stage of syncope, as had often happened before—and has happened since—in tunnels of very much shorter length but constructed on steeper gradients, wherein doubling and trebling of the locomotives are necessary. Various schemes were now proposed to prevent the loss of traffic caused by the enforced diminution of trains, but nothing was done until in April, 1898, the directors determined to adopt the Saccardo system of forced ventilation which had since July, 1894, been employed with fair success on a main line of the Italian Adriatic Railways in the Apennine tunnel near Pracchia. This method of mechanical ventilation, invented by Marco Saccardo, is in principle very simple. A cone-shaped ring of sheet iron, large enough for the trains to pass through but of less diameter than the tunnel, is placed concentrically with the latter and the vacant space between them is closed at the end next the mouth of the tunnel but remains open at the further end. Two air channels leading from this interspace communicate with two fans or ventilators by means of which air can be either forced into the tunnel or withdrawn from it. The length of the tunnel

from the Swiss or north end at Göschenen to the Italian or south end at Airolo is 15 kilometres or about nine miles. The prevailing direction of the natural air current is from north to south and as it is generally preferable to create a current from the ventilator rather than towards it the ventilating station has been placed at Göschenen. It was stipulated by the railway company that the air throughout the whole length of the tunnel should have a uniform velocity of three metres (9 feet 10 inches) per second and no more. The ventilators have been working regularly since March, 1899. The effect was satisfactory from the very first, the smoke never accumulates with such density as previously, the nauseating mildewy odour which was formerly prevalent has disappeared, and the suitability of the air for breathing is, of course, immensely improved. Among other tunnels satisfactorily ventilated in the same manner and described in the *Engineer* mention may be made of the Ronco tunnel (5·2 miles in length) and the Giovi tunnel (two miles in length), both of which are not far from Genoa. The principal reason which led to the application of forced ventilation in the Giovi tunnel was the asphyxiatio on August 12th, 1898, of two enginemen; the train that n back down the hill to a spot in the Polcevera valley where a marble cross now marks the site of a terrible accident. The Saccardo system of ventilation is also to be applied to the Mont Cenis tunnel. The station containing the machinery is near the Italian or Bardonnecchia entrance and was completed towards the close of 1903.

BRANDY v. BRITISH BRANDY IN SCOTLAND.

IN THE LANCET of Feb. 13th, p. 447, we commented upon a conviction under the Sale of Food and Drugs Act at Accrington, where some innkeepers had sold "British brandy" when asked for brandy. The medical officer of health of the county of Lanark, Dr. J. T. Wilson, has recently succeeded not only in obtaining convictions before the sheriff-substitute for similar offences but in a case selected as a test case for appeal to the High Court at Edinburgh has had the satisfaction of hearing upheld by the court his contention as to the application of Section 6 of the Sale of Food and Drugs Act, 1875, to grain spirit sold as brandy. The facts of the case in which the appeal was made seem to us to have established the culpable conduct of the defendant rather more clearly than is usual upon such occasions, although the circumstance which causes us to say so apparently affected the opinion of the Lord Justice Clerk in exactly the opposite manner. The inspector who bought the bottle of spirit which formed the subject of the charge asked the vendor what kind of brandy he was selling and received the answer, "Tricoche's brandy," which he imperfectly heard. He went away and returning ten minutes later asked a shopman in the defendant's employment for "a bottle of brandy," when he was given a bottle bearing the label "Old Brandy, Tricoche & Co., Cognac ***," for which he had to pay 8*s*. The finding of the sheriff-substitute as to the liquor thus sold, upon the evidence of analysis laid before him, was that it "contained a large proportion (about one-half) of either raw grain or beet-root spirit and was therefore not of the nature, substance, and quality of brandy." The decision of the Court of Appeal upon this and upon the other facts found by the sheriff-substitute was that they constituted an offence against the Sale of Food and Drugs Act. With regard to one of the objections raised, "that the complaint was not relevant in respect that it did not state what genuine brandy is," Lord Moncrieff said: "It is complained that the sheriff-substitute has made a standard for brandy for himself. I do not see how he could avoid that. He has taken the evidence of skilled witnesses and has come to a conclusion. It may be wrong but we must take it as a matter of fact"—in which view the rest of the court concurred. The point which caused some doubt in the mind of Lord Trayner, the third judge, and in consequence of which the Lord Justice Clerk declined to concur in the judgment of his learned brethren as to the guilt of the defendant, arose out of the question and answer referred to above which preceded the sale of the "brandy." These were considered by his lordship to show that "the inspector was told what kind of brandy was being sold," so that, even though he might not have heard or understood what was said, "the seller was entitled to assume that the purchaser was aware of what he was getting." We do not consider that everyone who buys brandy, whether an inspector under the Sale of Food and Drugs Act or not, is to be expected to know the reputation of Messrs. "Tricoche and Co." or from what materials they distil their stuff. To us the sale of a bottle labeled "Old Brandy, Tricoche and Co., Cognac ***," at 8*s*. implies the offer and acceptance of a French brandy from the Cognac district, an old and consequently matured spirit of "three star" quality, at a price which entitles the purchaser reasonably to expect an article such as the label describes. In short, the transaction strikes us as a worse instance of sale "to the prejudice of the purchaser" than where "British brandy" is sold as "brandy" without the additional attractions of deceptive French names, a claim of age, and an absurd price. The liquid sold at 8*s*. in Lanarkshire had apparently been imported from France and bought in cask from the importers by the retailers who had bottled it, and we feel inquisitive as to what it may have cost them before they put it on the market, a matter which was, no doubt, irrelevant to the appeal but which in such cases might, we conceive, affect the penalty inflicted. In any case, however, whether the defendants were themselves deceived or not, we congratulate the medical officer of health and the county council of Lanark upon their success on behalf of the public, and especially because in Scotland even more than in England brandy is not a beverage but is used principally for medicinal purposes. We venture to think that recent successful prosecutions in England and in Scotland have been results of THE LANCET Special Analytical Commission on Brandy. The Commission sought to make it plain, among other matters, that brandy, if genuine, is a distillation of wine or a "grape spirit" and that fraudulent imitations can be surely detected by chemical analysis. These propositions have now been proved by evidence in courts of summary jurisdiction and a court of appeal has decided that the facts thus established constitute an offence against a useful Act of Parliament passed for the protection of the public.

MYOSITIS OF THE RECTUS ABDOMINIS AFTER TYPHOID FEVER.

MYOSITIS is a rare complication or sequel of typhoid fever. In a series of 829 cases Professor Osler found it only once. In the *Boston Medical and Surgical Journal* of Nov. 26th last Dr. D. Scannell has described a case in which the rectus abdominis muscle was affected. It is of interest both because of the difficulty of diagnosis and because no other case in which this muscle was affected appears to have been recorded. A boy, aged nine years, was admitted to hospital with a severe attack of typhoid fever. After four weeks furunculosis, mainly of the abdomen, thighs, and buttocks, appeared as a complication. Cultures yielded staphylococcus pyogenes aureus and streptococcus pyogenes. 12 days later signs of ischio-rectal abscess developed. The pus did not yield the typhoid bacillus. Two months after admission he was discharged well. Five days later he was taken back with the history that on the day after discharge there was profuse diarrhœa with

a little blood in the stools and abdominal pain. The pain increased and there were chills and fever. On re-admission the temperature was 100·2° F. and the pulse was 134. He lay in the dorsal decubitus position with the thighs flexed. The lower abdomen on the right side was dull and very tender and a mass was felt there, giving a sensation like that conveyed by a full bladder. The Widal reaction was negative. Acute perforative appendicitis with abscess was diagnosed. Under ether, the abdominal muscles being relaxed, the question of a full bladder again presented itself but catheterism negatived this supposition. An incision was made over McBurney's point. The peritoneum and appendix were found to be normal. There was an ovoid indurated thickening of the right rectus muscle in its lower third. The appendix was removed and the wound was closed. Unfortunately the swelling was not incised. On the sixth day after operation the wound was healing and the temperature had fallen to normal but the induration and tenderness persisted. On the tenth day after operation the induration was slightly diminished and the wound was healed. From the thirteenth to the sixteenth day the conditions present on readmission—pyrexia, pain, spasm, and palpable mass—were reproduced. Then the mass gradually diminished and 24 days after operation it had completely disappeared.

A CRITICAL TRIAL OF SOME NEW DRUGS.

IN the *Wiener Klinische Rundschau*, No. 50, 1903, Dr. Alois Strass of Vienna gives the results of a careful critical examination of the effects of some drugs of comparatively recent introduction—viz., aristochin, aspirin, hedonal, mesotan, and theocin—with a view to determine their usefulness. Aristochin, a neutral carbonic acid ester of quinine, was administered in doses of from a quarter to half a gramme in place of quinine itself in about 15 cases. It has been claimed for this substance that it does not cause the noises in the ears and the giddiness sometimes resulting from the use of the sulphate of quinine and that it is not bitter. Dr. Strass was satisfied of the usefulness of aristochin but was not convinced in many cases of the absence of symptoms of cinchonism after its use and came to the conclusion that it had no advantages over the sulphate, except that for children the absence of the bitter taste was an advantage. Aspirin, which is a derivative of salicylic acid, one atom of hydrogen being replaced by an acetyl group, was given in about 40 cases. Satisfactory results were only obtained in cases with a rheumatic origin. Its action was in no way inferior to that of sodium salicylate and the unpleasant effects of this substance were in general not forthcoming. Aspirin entirely failed to influence the fever of pulmonary tuberculosis but was useful in some febrile conditions of doubtful origin and in the fever of acute gastro-enteritis. Hedonal, a hypnotic of the urethane group, was administered to about 40 patients, mostly cases of heart and lung disease with a few cases of neurasthenia and neuritis. The usual dose was from 1 to 1·5 grammes. Dr. Strass found that this drug had very little influence on insomnia, unless it were combined with some other drug influencing the cause of the sleeplessness more directly; for example, in heart cases it was necessary to give some strophanthus, in pulmonary tuberculosis codeine, and in neurasthenia bromides. In cases of neuritis and chronic alcoholism it tended to produce cerebral congestion and some excitement and was soon refused by the patients. Mesotan, a metoxymethyl ester of salicylic acid, was tried in about 30 cases and was found to be very useful in all conditions in which salicylates are of value. Its local action could be increased by the production of a local hyperæmia before its use by means of baths or dry cups—e.g., in sciatica and lumbago. Mesotan was, moreover, found to be a useful anhidrotic and for this purpose was used in pulmonary tuberculosis with good results but unfortunately not lasting, since in from eight to 14 days it ceased to act. For this purpose a few drops were rubbed into the skin of the chest and back shortly before retiring. Theocin (theophyllin), a synthetically prepared xanthine derivative, was tried in about 30 cases. It proved to be a valuable diuretic in many cases but only when no heart failure and no lowering of the blood pressure were present.

THE RELATION OF THE "N" RAYS TO VISION.

A NEW department of physiology seems likely to be opened up through the discovery of Blondlot's "n" rays which appear to play an important rôle in regard to various manifestations of vital activity. Several scientific observers have been working at the relation of the "n" rays to vision and Blondlot has observed that the eye is itself a source of the rays and also that the sensitiveness of this organ to light is augmented under their influence. M. Augustin Charpentier has carried the investigation a step further and has tried the effect of directing the rays upon the brain through the skull. Stimulation in this way, especially of the region of the angular gyrus, produces a sensation of luminosity. Changes in the pupils can also be brought about by introducing the region of the corpora quadrigemina into the path of the rays or by acting upon the medulla through the agency of a source of the "n" rays placed over the cervical spine. It is probable, therefore, that the "n" rays which accompany ordinary light waves are in part responsible for the phenomena of vision and in a recent communication to the Société de Biologie M. Bohn has ingeniously applied this hypothesis to explain why fresh water and marine animals adhere to the irrespective habitats. In some experiments on Nereis he found that while the animal when kept in sea water swims about actively in the light, in darkness it falls to the bottom of the vessel and crawls there sluggishly. A similar change takes place when Nereis passes from salt water to fresh—e.g., as in entering the mouth of a stream—its activity ceases and it is then carried out to sea again. M. Bohn suggests that the relatively dormant condition has the same essential origin in the two cases and is to be attributed to the cutting off of the "n" rays, on the one hand by removal of the source of light and on the other through the inability of the rays to pass through fresh water.

THE ASSOCIATION FOR THE TRAINING AND SUPPLY OF MIDWIVES.

THE council of the Association for the Training and Supply of Midwives is issuing an appeal for funds to enable it to carry on and to extend the work of the association. As it points out, the new Midwives Act requires that in future all midwives shall be trained and registered. After March, 1905, no one will be able to take the title of midwife unless certificated and after 1910 no women will be allowed "habitually and for gain to attend women in childbirth" without the certificate of the Central Midwives Board. There can be no question but that the number of untrained women who are practising as midwives throughout the country at the present time must be very large indeed. Many of these women will from lack of education, from lack of means, or from lack of opportunity be unable to obtain the certificate necessary to enable them to continue their work. It is with the object of helping such as these and for the purpose of assisting poor women to acquire the necessary training that this association has been formed. The cost of training has been estimated at about £20, a sum far beyond the reach of most of the women who at the present time are pursuing this calling. When

the new Act comes fully into force in 1905 a considerable demand for trained midwives is likely to arise and for some time it is probable that there will be a dearth of properly trained women. The livelihood to be gained by practice as a midwife amongst the poor must often be very small and very precarious and the initial expense will act as a deterrent to many who might wish to undertake such work. If a sufficient supply of fully trained women is to be provided for the poor it is necessary that the funds for their training should be contributed in many instances by the charitable public. The association undertakes to arrange for the training of suitable women in approved hospitals and other institutions and centres; it is anxious to coöperate in this work with local associations and it will be prepared as funds allow to make grants and loans in aid of training to associations and individuals. It is felt that in a large number of cases free training will have to be given under agreed conditions as to the subsequent work of the candidates, and it is also thought that a practical form of help may be in grants to local committees for the part maintenance of a midwife in districts too thinly populated to support one without such help. A home has been opened at East Ham by the association in coöperation with the Plaistow Maternity Charity, where four pupils at a time are trained in a crowded and very poor district under a competent midwife for the certificate of the Central Midwives Board. The objects of the association are worthy of all recognition and we hope that this appeal will meet with a favourable reception from those who have the interests of the poor at heart. As the registered midwife is now a legal institution it behoves us all, whatever we may think of the arguments that led to her creation, to see that she is a competent person. The offices of the association are at Hanover Chambers, 12, Buckingham-street, Strand, London, W.C., to which address any donations may be sent.

THE ETIOLOGY OF LEPROSY.

IN an annotation which appeared in THE LANCET of Jan. 30th, p. 318, we expressed a hope that further investigations would be forthcoming which would corroborate or otherwise Mr. Jonathan Hutchinson's theory with regard to the connexion between fish-eating and leprosy. We have now received a copy of a special report by Dr. George Turner, medical officer of health of the Transvaal, entitled "Fish and Leprosy" (Government Printing Works, Pretoria, 1903). Dr. Turner does not agree with Mr. Hutchinson that the eating of decomposing or imperfectly cured fish is the chief cause of the prevalence of leprosy. In support of his view he points out that leprosy is fairly common in Basutoland. He thinks that it is probable that the disease was introduced amongst the Basutos by the Hottentots but he argues that it does not follow that the source of infection was cured fish. He considers such an occurrence most improbable because the Basuto in his own land does not eat fish; he never fishes; and will not eat fish given to him by others. Dr. Turner gives a table showing the proportion of cases of leprosy amongst the different races reported at the census of 1901 in the Cape Colony. It is shown that excepting those of European race the Kaffir is the least affected, then in order comes the Malay, the most frequently attacked being the Hottentot. Yet the Malay is essentially a fish-eater in whose hands the catching and "washing" of fish chiefly rest. Dr. Turner argues that if the theory regarding the etiological influence of cured fish were true leprosy should be most prevalent amongst the Malays; but, as he has pointed out, such is not the case. Probably the white man eats fish more frequently than does any other class of the population, with the exception of the Malay, yet he suffers least of all. A table is given showing the number and percentage of the patients in the Pretoria Leper Asylum on July 31st, 1902, and indicating those who had eaten fish before becoming lepers, the kind of fish consumed, and the variety of leprosy from which they suffered. The facts with regard to the white and coloured races are interesting. 95 per cent. of the white patients had eaten fish and 45 per cent. had partaken of cured fish. Amongst the coloured races only 30 per cent. had ever tasted fish of any sort and only 10 per cent. cured fish, and there was this result, as shown by the statistics, that there were fewer cases of leprosy in the asylum amongst those who had habitually eaten fish than amongst those who had not. These observations would seem to disprove the theory enunciated by Mr. Hutchinson and it will be interesting to observe whether Dr. Turner's conclusions are supported by other authorities.

THE BRITISH MEDICAL BENEVOLENT FUND.

WE publish in another column a brief notice of the annual meeting of the supporters of the British Medical Benevolent Fund and desire, not for the first time, to bring the claims of this charity prominently before our readers. The committee of the fund pleads earnestly for continued and increased help without which many of the urgent applications made to the charity must be passed over; and it brings, in our opinion, sound arguments forward why its efforts should be supported. The cost of administration is only just over 5 per cent. of the funds at its disposal and, as there is no canvassing, candidates for benevolent aid are spared the pain of publicity. All legacies are invested in trust securities and thus an assured income is obtained for the annuity department. We think that these considerations should recommend the fund to those benevolent persons who desire to see their gifts well administered and who hold that a charity should deal with the public and its immediate supporters upon strictly business principles. The British Medical Benevolent Fund does excellent and valuable work in an unostentatious and economical fashion, and we should be glad to hear that accessions to its funds enabled it to extend its operations.

A RARE DEFENCE.

ALTHOUGH the general public are not lacking in a proper gratitude for the services of the medical profession, yet when it comes to an expression of opinion dramatists, novelists, and satirists of all kinds have from the days of Molière chosen rather to hold the medical man up as an easy butt than to employ the forces of ridicule in his just defence. With all the more pleasure, then, did we read an article signed "S. R. L." in the *Manchester Daily Dispatch* of Feb. 10th. The author of this article—whoever he is—writes "All for the Dear Doctor," and he is not only witty and amusing in the medical man's behalf and at the expense of those who decry him but also extremely sensible. To begin with, he holds sound views upon the value of a medical man's advice and attention, altogether apart from any drugs that the practitioner may or may not choose to employ. He deprecates the common way in which the medical man and the medicine are confounded, as though they were integral parts of one obnoxious whole. "One might as well give up the shoe-maker because he did not make one able to walk about in bare feet," says our author, "as the doctor because his medicine does not provide a new stomach, or liver, or whatever the defective organ under treatment may happen to be." Again, "S. R. L." combats the way in which the man of the legal and the man of the medical profession are constantly viewed in the same light. The public, he says, regards one as the parasite of crime and the other as the parasite of disease. Yet, according to him, no comparison could be more unfair, for whereas

the lawyer fosters litigation, upon which he fattens, the medical man spends his days in paradoxical but benevolent efforts to mitigate those very evils which are the source of his livelihood. "How easily," he says, "might an unscrupulous doctor terrify his patients and treble his income by magnifying their complaints and multiplying his own attendances, and how thoroughly in accord would such practice be with the lines on which business and other professions run. How entirely opposite, says our laudator, "is the behaviour of the family doctor," and we are glad to believe that the praises of "S. R. L." are well founded and widely deserved.

CYTODIAGNOSIS IN NERVOUS DISEASES.

THE study of the cerebro-spinal fluid and of other serous fluids of the body has opened up a new field of diagnosis in medicine. In some departments considerable results have already been achieved. The study of the cerebro-spinal fluid and its contained cell elements (cytodiagnosis) has been carried out with great success, especially by observers of the French school, an account of whose work has already appeared in THE LANCET.[1] The special methods of cytodiagnosis are being widely used in nervous diseases since Quincke devised his method of lumbar puncture whereby the fluid could be drawn off easily for study. In the *Medical Record* of Jan. 23rd Professor Charles L. Dana, of Cornell University, gives an account of his studies on a series of cases of various nervous diseases. Widal in 1900 reported several cases tending to show the value of cytodiagnosis and claimed for it an important place in the diagnosis of cerebro-spinal syphilis, tabes dorsalis, and general paralysis and his observations have been largely confirmed by others. The cerebro-spinal fluid exists normally in the subdural and pia arachnoid spaces under a pressure equal to that of from 40 to 60 millimetres of mercury, but under pathological conditions, says Professor Dana, it may rise to 800 millimetres. The specific gravity is from 1003 to 1004 but in inflammatory and other diseases it may rise to from 1008 to 1012. Normally it is clear but in disease it may be cloudy from the presence of cells and débris or may become blood-stained. In general paralysis and in cerebro-spinal meningitis the proteid constituents of this fluid are increased (Widal, Ravaut, Guillain). The disintegration of medullated nerve fibres, a process which occurs in cases of chronic alcoholism, is indicated by the presence of cholin in the cerebro-spinal fluid, a fact which was ascertained by Dr. F. W. Hastings in Professor Dana's patients. Phosphoric acid is, according to Donatti, simultaneously met with in the cerebro-spinal fluid, this substance and cholin being joint products of the disintegration of lecithin which exists in the myelin of the nerves. A systematic study and counting of the cellular elements were made in 22 cases by Professor Dana with the following results. In eight cases of general paralysis the lymphocytes or cells in the fluid varied from 16 to 135 per 100 fields of the hæmocytometer. In two other cases of the same they averaged from three to six. Lymphocytes were found to be abundant in the fluid in cases of both general paralysis and of tabes dorsalis. In commencing alcoholic insanity and in Korsakoff's disease the cells varied in number from four to six per 100 fields, in cerebro-spinal meningitis they were more frequent and averaged 155, while in syphilitic disease of the brain or spinal cord they reached the very high average of 722. In cases of doubtful diagnosis between general paralysis and chronic alcoholism the existence of cells in the cerebro-spinal fluid tended to indicate the presence of the former disease, while the absence of cells enabled the investigator to exclude syphilis, tabes dorsalis, general paralysis of the insane, and multiple sclerosis. In meningo-myelitis of syphilitic origin, says Professor Dana, the abundance of the cells indicated the degree of intensity of the morbid process. When bacterial (streptococcal) inflammation was present there were observed polynuclear leucocytes in the cerebro-spinal fluid, whereas in ordinary syphilitic disease only mononuclear leucocytes were present. Mallory and Wright stated in 1897 that in tuberculous meningitis the predominant cell in the cerebro-spinal fluid was the lymphoid (mononuclear) cell but that in purulent meningitis polynuclear leucocytes preponderated, and this is confirmed by Professor Dana's cases. In the same issue of the *Medical Record* Professor Joseph Fraenkel of New York gives an account of 47 cases studied by him in regard to cytodiagnosis. Of these 33 afforded cerebro-spinal fluid in sufficient amount for study. They included seven cases of tabes dorsalis, four of general paralysis, three of cerebro-spinal syphilis, seven of multiple sclerosis, two of paralysis agitans, three of cerebral tumour, two of severe hysteria, and one each of poliomyelitis, cerebral diplegia, aural vertigo, hereditary syphilis, and rhinorrhœa. All the cases of tabes dorsalis presented a marked increase of lymphocytes and in two of them polynuclear cells were present. Three cases of general paralysis and six of multiple sclerosis showed marked lymphocytosis as did two cases of cerebro-spinal syphilis and one case of cerebral gumma. In all the other cases, adds Professor Fraenkel, the fluid was free from corpuscular elements. All the observations of Professor Dana and Professor Fraenkel were made under aseptic precautions.

[1] THE LANCET, May 30th, 1903, p. 1535.

THE CONGRESS ON CLIMATOLOGY AND URBAN HYGIENE AT NICE.

A FURTHER programme has been issued concerning this Congress. Though it is entitled the First French Congress of Climatothérapie et Hygiène Urbaine, the circulars concerning the same are printed in English and foreigners generally are cordially invited to attend. The object is to discuss the climatic treatment of disease and the hygiene of health resorts where such treatment may be attempted. With this programme it is but natural that the Congress should meet on the Riviera. We are told that the Congress "will consist of duly qualified French and foreign physicians, of scientific men whose works bear on the subjects to be discussed at this Congress, and also of representatives of the medical press." Application for membership must be made not later than March 15th and the entrance fee of 20 francs should be sent to the treasurer, Dr. Bonnal, 19, Boulevard Victor-Hugo, Nice. A form will then be forwarded, on which the member must inscribe the details concerning the route by which he proposes to travel and he will then receive tickets which will entitle him to a reduction of 50 per cent. in the railway fare. Speeches in other languages than French may be delivered if the president approves. Several papers by well-known local practitioners are announced on the climatic effects of various Riviera resorts and Dr. Balestre, whose functions at Nice are the nearest French approach to those of an English medical officer of health, will read a paper on the Disinfection of Towns. Of course, there will be excursions and facilities given to investigate on the spot the various advantages offered for the treatment of the diseases that are most likely to be benefited by a change of climate. Professor Chantemesse of the Pasteur Institute will preside and Dr. Hérard de Bessé of Beaulieu-sur-Mer, Alpes Maritimes, is the general secretary of the Congress. All seems to have been well thought out and organised. Indeed, if there is any fault it is rather that the rules enter somewhat too much into detail and do not leave the field sufficiently open to the circumstances and inspirations of the moment. One rule, in any case, is sure to break down

It is undoubtedly very necessary to limit the duration of the speeches, though this is best done by a vote of the Congress itself given when the necessity of such limitation has made itself felt. But here we are told in advance that the time for reading papers must not exceed ten minutes and the speeches discussing these papers five minutes. It is absolutely impossible to treat complex scientific subjects in so short a time. The president is sure to allow speakers to overstep this narrow limit and once such a concession is made to one speaker it cannot be refused to others. A broader limit might be more easily observed and then something effective would be done to check undue loquacity. Undoubtedly as travelling becomes more and more easy there will be an increased tendency to utilise change of climate in the treatment of disease. Such congresses as that announced should facilitate this very natural and generally very agreeable method of treatment.

THE IMPERIAL YEOMANRY HOSPITALS' REPORT AND SIR ALFRED FRIPP.

WE were requested last week to publish the letters from Sir Alfred Fripp and the Countess Howe which appear on p. 605 of our present issue. Publication was delayed, however, by a communication which we received from Sir Alfred Fripp to the effect that his letter as it had appeared in the lay press was not as he had signed it. His apology, as we now print it, tallies with the document signed by him which has been produced for our inspection by Lady Howe's solicitor.

THE LONDON LICENTIATES' AND MEMBERS' SOCIETY AND THE LONDON CONJOINT DIPLOMA.

A MEETING of the London Licentiates' and Members' Society was held on Feb. 23rd, when Dr. F. J. Smith, the President, addressed the society. He explained clearly the circumstances, so often alluded to in THE LANCET, by which the provincial student has obtained so great an advantage over the London student in the securing of a medical degree, and pointed out that the public had begun to assume that a practitioner without a degree was in some way, on paper and in theory at any rate, inferior in medical attainments. The effect on the medical schools in London now was, he said, that for some years there had been a steady and nearly persistent increase in the number of students in the provincial schools and a decrease in those of the London schools, a result which it was thought the London teachers might have foreseen. They were told, it was true, that the Royal Colleges tried to obtain powers to grant a degree in medicine; that might be so but it was impossible to believe that their efforts were really thorough and unanimous and that they went steadily to work with the one object in view of relieving the difficulties of metropolitan students of medicine. The reconstructed University of London had copied the worst features of the old examining body of that institution and had grafted on to the old constitution but little of what was of use in the metropolitan schools of medicine. The petition of the London Licentiates' and Members' Society, setting forth these disabilities and difficulties, had been received by the Royal College of Surgeons of England very sympathetically and by the Royal College of Physicians of London with hardly the same spirit, but the meeting of a combined committee of the two Colleges led to nothing. The Colleges declined to approach the University of London with a view to any combined examinations. The association then appealed to the University of London whose reply was that it could not help them. The association has our best sympathies but we do not see how the object for which it is working, the granting of a medical degree to holders of the London diplomas or licence, is to be effected. We look forward confidently to the time when the medical degree of the University of London will be attainable by all capable and industrious London students, but no regulations by the University or the Colleges to assist in bringing about this result would be retrospective in their action.

THE LONDON SCHOOL OF TROPICAL MEDICINE: CRAGGS'S RESEARCH PRIZE.

A PRIZE of £50 will be awarded to a past or present student of this school who during the current year (October to October) makes the most valuable contribution to tropical medicine. Contributions must be written in English and essays must be sent in on or before Oct. 1st next to the Medical Tutor at the London School of Tropical Medicine, Royal Albert Dock, London, E., who will gladly afford further information.

SANITARY MARITIME AND QUARANTINE COUNCIL OF EGYPT.

IT is announced that the Quarantine Board of Egypt will dispose of five posts for medical officers at a monthly salary ranging from £22 11*s.* to £28 14*s.* Competitors must be duly qualified either by a European faculty or by the State. Applications must be addressed to the President of the Quarantine Board not later than April 2nd, 1904, accompanied by (1) a copy of the candidate's diploma; (2) a certificate of practical work; (3) a certificate of good health; and (4) a formal engagement to take possession of the post, in case of nomination, during the month following the official notification. Candidates must also indicate the languages which they know. The administration reserves the right to send these medical officers, in succession, to the different ports of the Mediterranean and Red Sea. Their resignation cannot be accepted unless addressed to the Presidency of the Quarantine Board three months in advance.

SMALL-POX IN MADAGASCAR.

IN what way small-pox was first introduced into Madagascar is uncertain but there is evidence that the disease has long been prevalent in the island. Its dangerously infective character was early recognised and in the *Annales d'Hygiene et de Médecine Coloniales* for 1904 is given some account of the protective measures adopted before the French occupation of the country. At the beginning of the nineteenth century there was in vogue the primitive procedure of burying alive the unfortunate victims of the disorder, a penalty of death being exacted in the case of any person who attempted to disinter the body. This barbarous method was in time replaced by a rigorous isolation of the sick person who was confined in a pit to the edge of which food was brought by his friends, the patient apparently being otherwise left entirely to his own devices. Greater laxity marked the reign of King Radama I., in whose time the practice of vaccination on the lines of Jenner is said to have been employed, but his successor, Queen Ranavalona, returned to a great extent to the old régime. She forbade anyone who had not already had the disease to act as a nurse and prohibited the washing of infected clothing in running water, but so far as the sufferer himself was concerned seems to have contented herself with a policy of *laisser faire*. Under King Radama II. still less attention was paid to sanitary precautions and though after him Queen Rasoherina again checked the exhumation of those who had died from small-pox it was not until French influence became predominant in 1896 that modern hygienic methods can be said to have obtained a firm footing.

THE medical officer of health of the Cape Colony states that for the week ending Jan. 30th no case of plague was

discovered throughout the Colony. Dead rodents were found at Port Elizabeth, East London, and Queenstown, but in the Cape Town and Harbour Board area although 221 rats were examined during the week none was found to be affected with plague. As regards the Mauritius a telegram from the Acting Governor, received at the Colonial Office on Feb. 19th, states that for the week ending Feb. 18th there was one case of plague and that was fatal. As regards Hong-Kong telegrams from the Acting Governor state that for the week ending Feb. 13th there were 2 cases of plague and 2 deaths from the disease and for the week ending Feb. 20th there were 1 case and 1 death.

Sir Edward H. Sieveking, physician extraordinary to His Majesty the King, died on Feb. 24th in his eighty-eighth year. He graduated as M.D. of the University of Edinburgh in 1841 and was well known for his work in connexion with diseases of the nervous system.

His Majesty the King of the Belgians has bestowed upon Dr. A. S. Gubb, now of Algiers, the Civic Cross of the First Class for services rendered by him as honorary medical officer of the Société Belge de Bienfaisance de Londres.

THE general condition of Sir Samuel Wilks is causing great anxiety and it is with sincere regret that we have to report that his strength and powers of resistance are declining.

Looking Back.

FROM

THE LANCET, *SATURDAY*, FEB. 25, 1826.

ROYAL COLLEGE OF SURGEONS.

On Saturday last, February 18th, a public Meeting[1] of the Members was held at the Freemasons' Tavern, to take into consideration the best means of remedying the abuses which exist in the government of this College. The number of gentlemen present was upwards of twelve hundred. At seven o'clock Mr. LAWRENCE entered the Hall, and, on the motion of Mr. Tyrrell, was immediately called to the Chair, amidst the loudest acclamations.

Mr. LAWRENCE.—In the year 1824, certain regulations were framed by the ruling body of the College of Surgeons, which I considered as having been directed against the whole body of the members of the profession. The substantial enactment is short but effective for its purposes. I will read the bye-law, if you please, before I enter upon any commentary:—

"The Court of Examiners of the Royal College of Surgeons, in pursuance of their duty to promote the cultivation of sound chirurgical knowledge, and to discountenance practices which have a contrary tendency, have resolved,—That from and after the date hereof, the only Schools of Surgery recognised by the Court, be those of London, Dublin, Edinburgh, Glasgow, and Aberdeen. That certificates of attendance upon the chirurgical practice of a hospital be not received by the Court unless such hospital be one of the above recognised schools and shall contain, on an average, one hundred patients.

"And that all certificates of attendance at lectures on anatomy, physiology, the theory and practice of surgery, and of the performance of dissections, be not received by the Court, except from the appointed Professors of Anatomy and Surgery in the Universities of Dublin Edinburgh, Glasgow, and Aberdeen, or from persons teaching in a School, acknowledged by the medical establishment of one of the recognised hospitals, or from persons being physicians or surgeons to any of those hospitals."

When men begin to legislate, inasmuch as the laws which they frame are to govern the conduct of others, they should express themselves in the plainest language, and avoid all ambiguity. This I take to be one part of the duty of legislators. Whether or not the enactments which I have just alluded to are calculated to promote "sound knowledge," and "discourage practices of a contrary tendency," I leave you to determine. Yet, Gentlemen, it is by such regulations as these—it is upon such miserable pretexts, that the great body of the profession, not only in London, but in the country, are disqualified from teaching the knowledge of their science to others, how great soever may be their peculiar superiority in imparting instructions, whatever be the stores of valuable information which a long course of industry and fortunate opportunities may have enabled them to amass.—(*Cheers*.) Gentlemen, it is necessary that we advert for a moment to the distinction which is laid down in this famous regulation, between winter and summer courses; and first of all we observe that they require of the candidate, that he shall have attended three winter courses at least. Now, Gentlemen, I take the liberty to say that, as is sometimes the case with lawmakers, these excellent legislators require that which is absolutely impossible to be performed! In London, Gentlemen, whatever may be the case elsewhere, there are, in fact, no winter courses given, at least no winter courses so called. We know very well that two courses of lectures are delivered in each year, the one commencing in October, the other in January. But that which begins in October is called, as you well know amongst the profession, and by the Lecturers themselves, according to their advertisements in the newspapers the "autumnal course," and that which commences in January is uniformly denominated the "spring course." You see, therefore, that the candidate cannot comply with the law; there is no winter course of lectures for him to attend. (*Laughter and applause.*)

The next, Gentlemen, is a regulation of more extensive power—"That certificates of attendance upon the chirurgical practice of a hospital be not received, unless such hospital be in one of the above recognized schools," meaning those of Dublin, Edinburgh, &c. as above mentioned. In a subsequent clause of the same regulation, we find, that attendance on anatomical or other lectures, is not to be recognized, except from the appointed professors of the above schools, or "from persons teaching in a school acknowledged by the medical establishment of one of the recognized hospitals, or from persons being physicians or surgeons to any of those hospitals." I really profess myself unable to understand this jumble. In the first clause, the privileged hospital must be in one of the recognized schools, and in the next, the favoured school must be acknowledged by the medical establishment of one of the recognized hospitals! Now, Gentlemen, to say nothing of the absurdity of supposing, as this regulation does, that anatomy and surgery may be taught by the *physicians* of a hospital, I do declare that I deem it to be impossible to have combined more confusion, more nonsense in the same compass, than are to be found in the limits of this short enactment. (*Applause.*) But, Gentlemen, I have a more material objection to state, and it is to the catalogue of the schools of instruction to which the privilege of recognition has been conceded—Aberdeen, Glasgow! We know, Gentlemen, that at least anatomy cannot be studied in those places with any hope of success. We are all, I believe, aware, and no one is more ready than myself to acknowledge the great talents and acquirements of the Gentlemen at the head of the anatomical schools in those places; but we are also aware that they are destitute of *subjects*[2] and without subjects, without the necessary means, no talents in the teacher, no acquisition of which he can boast, no peculiar fitness for the office of instruction on his part will avail the student in his study of anatomy. (*Applause.*)

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[1] Excerpts only have been transcribed. The full report of the meeting occupied 37 columns of THE LANCET. The speakers were Mr. Lawrence, Mr. Tyrrell, Mr. Wardrop, Mr. Wakley, Mr. Kingdon, Mr. Churchill, Mr. Weltbank, Mr. Lloyd, Mr. Wakefield, Mr. Leese, Mr. Wigan, Mr. Dillon, Mr. Ellerby, Mr. Wain, Mr. Macilwain, Mr. Ingram, Mr. Garland, and Mr. Paty.

[2] This statement was challenged in THE LANCET of March 18th by Glaswegians, and Mr. Lawrence's reply, modifying the statement, appeared in THE LANCET of March 25th.

FREEMASONRY.—*Rahere Lodge, No. 2546.*—A meeting of this lodge was held at Oddenino's Imperial Restaurant, Regent-street, London, W., on Tuesday, Feb. 16th, W. Bro. Ernest Clarke, F.R.C.S., being in the chair. The sanction of Grand Lodge to the change in the place of meeting was announced. At the request of Bro. Nunnerly the Master and Wardens signed a petition to Grand Lodge for the formation of a St. George's Hospital Lodge—the eighth hospital lodge to be established in London and the sixth which the Rahere, the oldest, has had the privilege of assisting to promote. A considerable number of the brethren subsequently dined together.

THE NEW SCIENCE SCHOOLS AT THE UNIVERSITY OF CAMBRIDGE.

THE MEDICAL SCHOOL.

THE new buildings of the Cambridge Medical School, which are to be opened on Tuesday next, March 1st, by His Majesty the King, accompanied at her special desire by Her Majesty the Queen, will provide accommodation for the departments of medicine, midwifery, surgery, and pharmacology. The same buildings will temporarily house the departments of public health, medical jurisprudence, and pathology, the last named being the department which will later receive expansion when the whole of the projected block is completed and when an Institute of Hygiene is prepared to carry on the work of instruction in theoretical and practical sanitation.

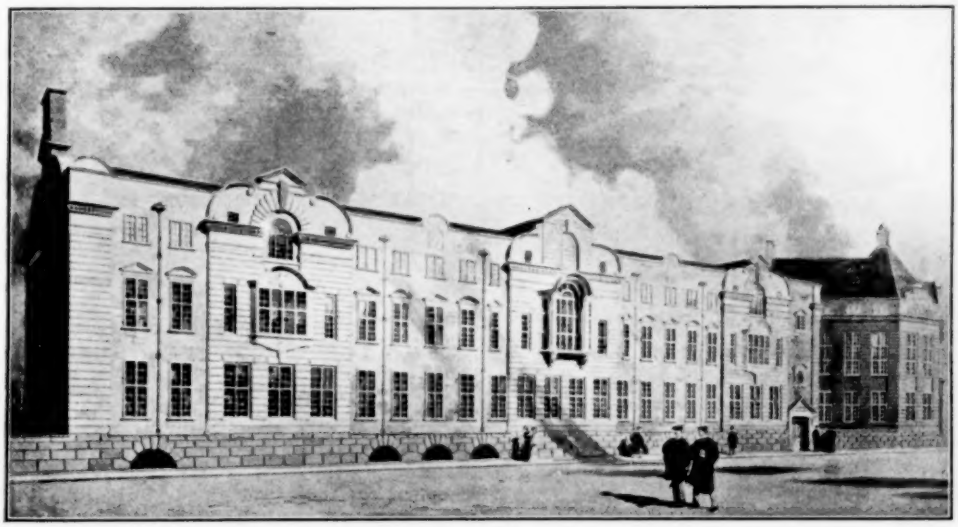
As will be seen from the plans (see Fig. 2) the block is shaped roughly as an L. The long arm of this L has its south façade facing Downing street and runs east and west to terminate at the eastern extremity in the Humphry Museum (see Fig. 3). The short arm is not yet completed, but it will run northwards from the Humphry Museum to join the older buildings of the school, the ancient houses, which formed the original medical school, being removed. The new buildings are built of brick faced with Ancaster stone and, as will be seen by our illustration (see Fig. 1), are plain in style, no money having been wasted upon making what is meant to be a centre of hard practical work and progressive research wear the appearance of a palace or a temple. The classic ornamentation introduced upon the Humphry Museum is almost the only departure from the suitable severity of the building.

The accompanying plans show clearly how thoroughly the needs of the modern medical student are to be met for the future at Cambridge. On the *Basement Floor* are situated workshops, store-rooms, combustion and other experimental rooms, photographic rooms, and stables opening into a small yard, while we have here also the engine house and accommodation for the electric lighting, heating, and ventilating installations. The heating and ventilation are carried on independently on the Sturtevant plenum system by means of two steam heaters, two fans driven by electric motors, a special air filter, and an elaborate system of ducts and flues built throughout the walls of the whole building. Air, therefore, is thoroughly washed, screened, and warmed before being distributed through the structure. Electricity for light and power is developed by two 20 h.p. Diesel oil engines coupled to two dynamos, while there is reserve current stored sufficient for an eight hours' supply in a battery of accumulators. Thus it will be seen that the plant has been particularly arranged to obviate immediate stoppage of the whole system in case of injury to any detail. Each ventilating fan is capable of doing three-quarters of the warming of the whole building, and the accumulators would provide temporary electric current in case of stoppage of either of the dynamos.

On the *Ground Floor* is the east entrance in Downing-street. Immediately to the left of this entrance are various private work-rooms, large demonstration and examination rooms, the medical and surgical departments, and the pharmacological laboratories with the private work-rooms belonging to this branch of study. The entrance and staircase are spacious and are paved with black and white marble. A large lecture room, built to accommodate a class of 200 students, is at the foot of this staircase, while facing are the pathological museum and two workrooms, one for pathology and the other at present for public health work. It will be noted by the plan that the big lecture-room receives practically no lighting from without but is dependent upon artificial light. This was done deliberately so that all available light could be used for the work-rooms where the maximum of natural illumination is indispensable. In a lecture-room not only is artificial light as good as natural light but it is even better, for the exact amount necessary for a demonstration can be focussed on to a particular map or screen and maintained there steadily. The method adopted at Cambridge of giving no outside wall to the big lecture room has already been imitated in other buildings having similar objects.

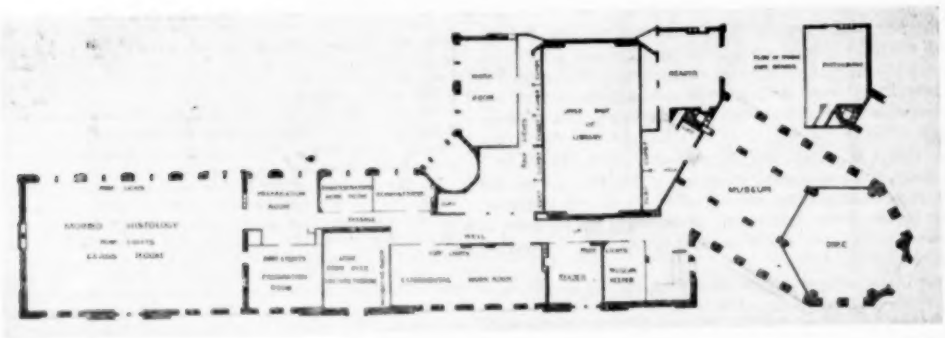
On the *First Floor* we have the Humphry Museum, the most elaborate feature of the pile. This is a nobly proportioned chamber, 62 feet long by 38 feet broad, terminating with a bold and lofty semi-octagonal eastern end (Fig 3). Over this is a dome supported by marble columns. The walls are lined with glazed tiles of varying depths of sea-green in colour relieved with dull pink mouldings. The tiles are quite plain and flat and the scheme of decoration does not pretend to be other than tile

FIG. 1.

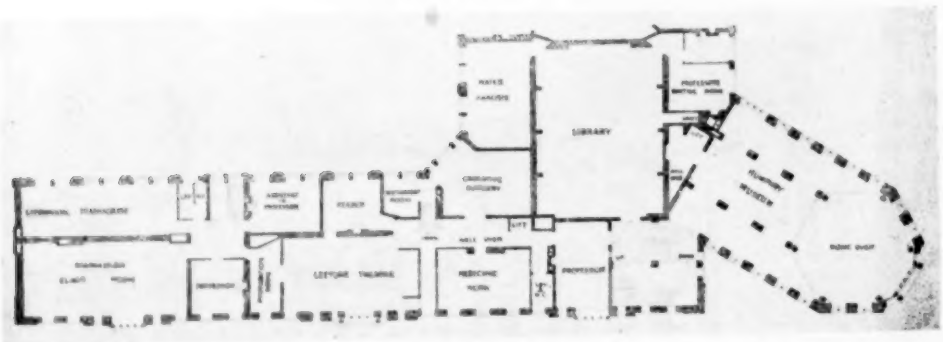


New Buildings of Cambridge Medical School, Downing-street Façade

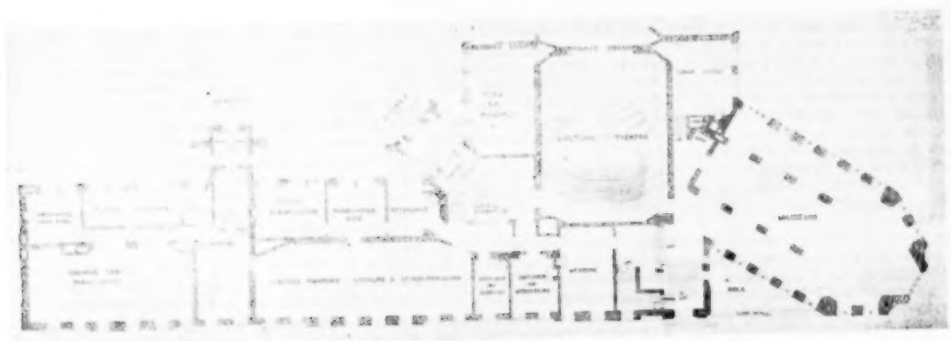
FIG. 2.—PLANS OF THE NEW MEDICAL SCHOOL BUILDINGS.



Second Floor Plan.

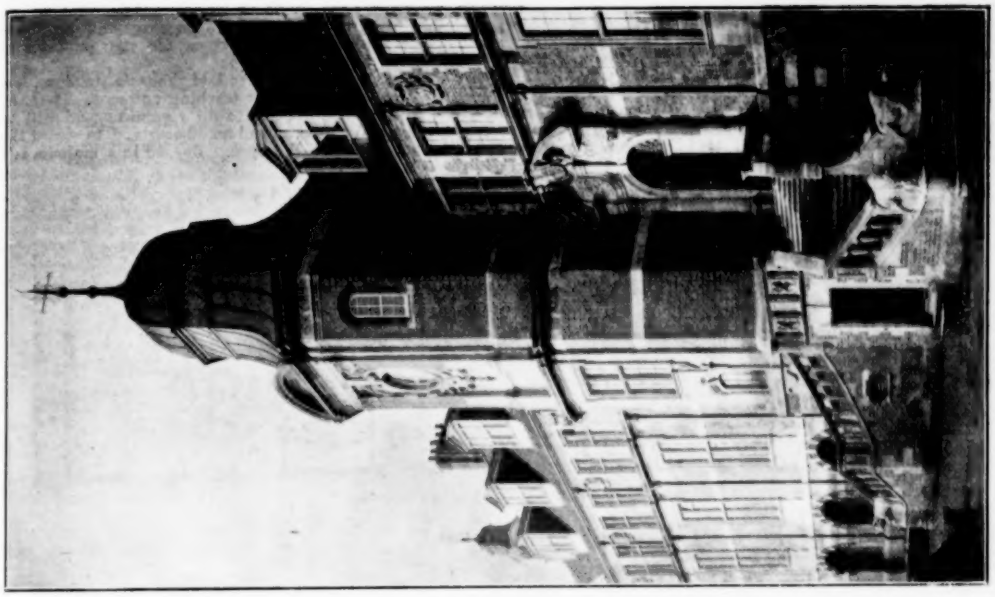


First Floor Plan.



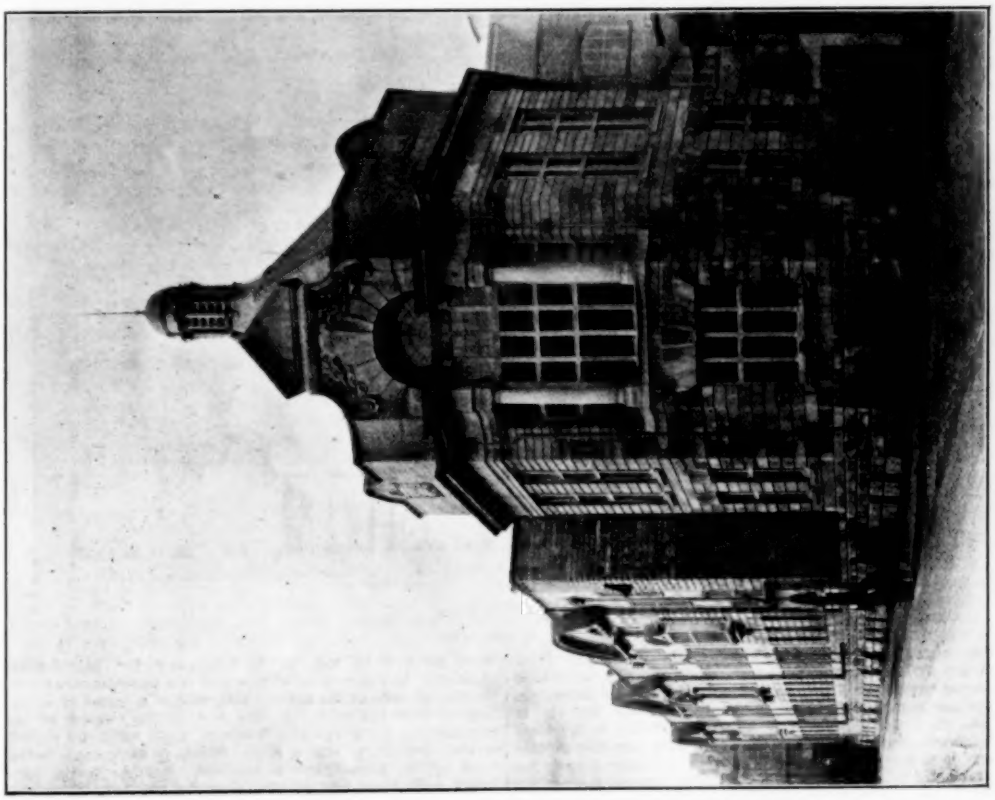
Ground Floor Plan.

FIG. 2.



The Geological School, south entrance.

FIG. 3.

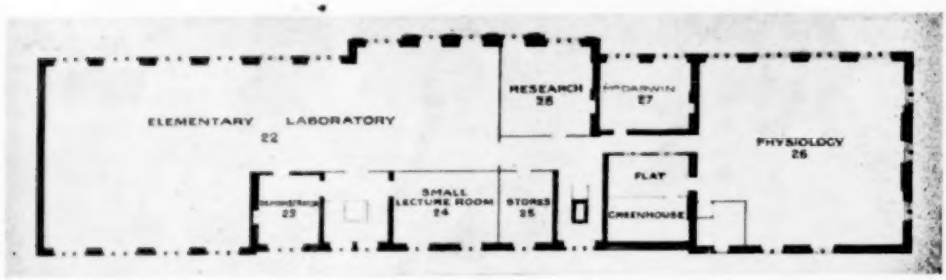


The Humphry Museum (New Medical School).

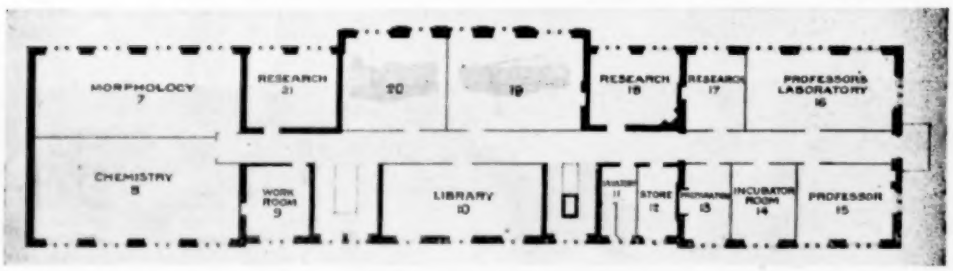
work. It is consequently satisfactory and effective. It is the work of Mr. Conrad Dressler. The cost of the Humphry Museum was largely defrayed by subscriptions from Cambridge medical graduates, so many of whom were pupils and friends of the great Cambridge teacher and surgeon. They cannot fail to be gratified at the use to which their subscriptions have been put. On the same landing is the library. This, like the Humphry Museum, is a lofty room and both, it will be seen from the with a lecture room of 60 desks. On the same floor are admirably fitted class-rooms for elementary and advanced pathological work and work-rooms for the professor of pharmacology and his assistant.

On the *Second Floor*, at the end of the main staircase, is a small museum, to be used for teaching purposes. Here the student will have full access to all specimens and will be able to bring his text-books and note books and to record the result of his studies on the spot. Beyond this museum is a

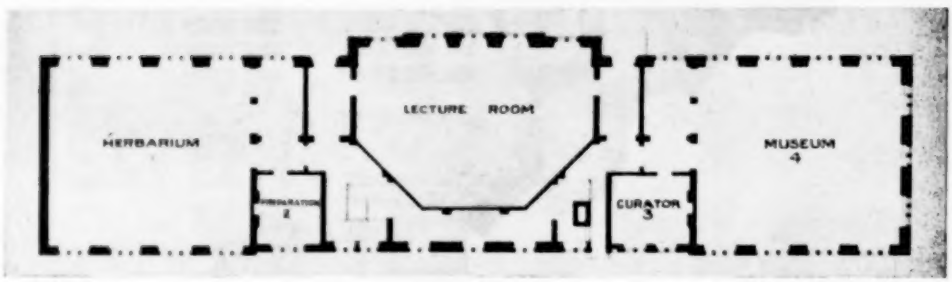
FIG. 5.—PLANS OF THE BOTANICAL SCHOOL.



Second Floor Plan.



First Floor Plan.



Ground Floor Plan.

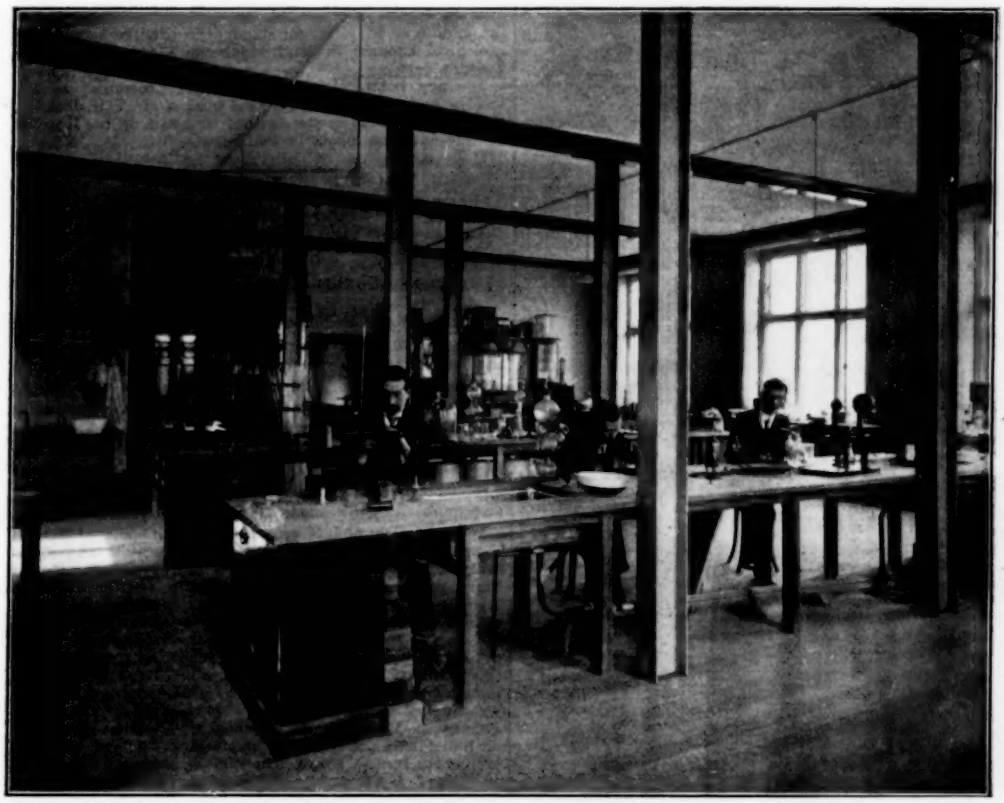
plans, occupy space in two storeys. It is lighted from the top. The arrangement for storing books in stacks is ingenious, for each separate block of cases is moveable, allowing access to shelves behind. In this way it is hoped to house a very large reference library in quarters of modest dimensions. On the same floor are the private room of the Regius professor of physic, a research room for members of his class, and an operating room and a private room for the professor of surgery. This room communicates room already in use as a laboratory for pathological chemistry, in connexion with which is a photographic room. On the left side of the central staircase is a series of rooms lighted from the roof—viz., the room of the curator of the museum, a private research room, a larger room for experimental pathology, and a room which is at present being used by the department of hygiene. Further to the west are a work room and private room for the demonstrator of special pathology, two rooms used for the preparation of

specimens, and a large practical class-room for morbid histology lighted from the roof with northern aspect and having accommodation for 90 students. A store-room and good incubating room are above.

Such in brief detail is the accommodation which the University of Cambridge is now providing for the scientific and technical education of the medical student, but this sort of auctioneer's catalogue of rooms does not do justice to the energy and ingenuity of those responsible for the buildings. We have mentioned many class rooms designed either for research purposes or for the practical work of the students. In all of these the greatest care has been exercised to give the worker the maximum advantage. Hot and cold water, gas, and electric current are laid on in an accessible manner to every bench and all the plain furniture sashes are of cast iron and great attention has been paid to the lighting, all the laboratories being splendidly lighted. The big class room for 90 students on the top floor of the building is a model of what such a room should be. It is divided into two by a moveable partition and lighted from above in such a way that the back benches are just as good for microscopic work as the front benches.

The responsibility for the design of the buildings rests with Mr. E S. Prior, who has met fully the wishes of the various professors and teachers more immediately concerned with the Cambridge Medical School. Professor Sims Woodhead has been indefatigable in assisting him with his unrivalled expert knowledge. The work has been carried out by Messrs. Kerridge and Shaw. Mr. Wray, of Messrs. Sturtevants' firm, has supervised the engineering work.

FIG. 6.



A Laboratory in the Botanical School.

is strong and suitable. There is a lavish supply of cupboards, drawers, and lockers for the keeping of reagents, specimens, and microscopes, while the precautions taken against dust and dirt are elaborate. Concrete floors have been put in throughout and glazed surface channels are employed to take the waste water, &c., in all laboratories immediately outside. All the supply pipes and electric wires being carried in covered chases can be reached without breaking the walls or floors. The walls and ceilings are finished with a smooth concrete surface, all angles are rounded, and there are no skirting boards, but the walls join the floors in plain curves below, as they join the ceilings in plain curved cornices. All doors and all furniture have been made plain and flat, there are no mouldings or projections anywhere to catch dirt; the window

THE GEOLOGICAL AND BOTANICAL SCHOOLS.

The King, as we announced last week, after inspecting the new medical school buildings will visit the new law school, the new botanical school and laboratory, and lastly, will visit the geological school and will unveil the statue in the Sedgwick Museum to the famous Cambridge geologist, Professor Adam Sedgwick. The three schools stand in the beautiful park ground, lying north of Downing College, which has been purchased recently by the University from that College. The botanical and geological schools which are built upon a common plan are dignified as well as beautiful buildings, thoroughly adapted to their modern purposes, and yet so built as to harmonise externally with the mediæval features of

Cambridge. The bright grey stone, relieved with red bricks and red tiles, makes exactly the right combination of solidity and lightness, and Cambridge is to be congratulated upon these additions to the beautiful university city.

The accompanying plans of the botanical school, by the range of accommodation indicated, prove how thoroughly the science of botany is being taught at Cambridge, where the subject is now pursued not only as an ancillary science to medicine but as a department of agriculture. A large number of students take up botany as one of the subjects for the natural science tripos, while the practical side of the subject is further recognised by those who wish to work at forestry. Every facility is offered to the student to observe with his own eyes pathological processes in plants, a fact that may have a most important bearing having regard to the recent developments in the work of cancer research.

FIG. 7.

The Sedgwick Statue, by Onslow Ford.

Parallel to, and just north of, the botanical school stands the geological school, the principal entrance on the southern face being shown at Fig. 4. Here are housed the historic fossil cabinets of John Woodward, the famous seventeenth century geologist, who was the first to recognise the existence of strata in the earth's crust, as well as the enormous collection made by Professor Sedgwick and carried on by Professor T. McK. Hughes, his successor and biographer. 30 years ago, on the death of Adam Sedgwick, it was proposed to build a Sedgwick museum, both to preserve his name in the university which he served so well and to house his splendid specimens. This has at last been done, and in the middle of his museum stands the life-like statue with geological hammer in hand which the King will unveil on Tuesday next.

The new botanical school, the new geological school, and the new law school are all the work of Mr. T. G. Jackson, R.A., who has thus scored further successes in his long list of university and scholastic buildings.

THE UNIVERSITY OF LONDON: THE INSTITUTE OF MEDICAL SCIENCES.

LETTER AND DONATION FROM HIS MAJESTY THE KING.

THE Faculty of Medicine of the University of London was summoned on Feb. 19th to "receive a communication from His Majesty the King in reference to the proposed Institute of Medical Sciences." Mr. H. T. BUTLIN, the dean of the faculty, who presided over the meeting, took the opportunity of laying before the members the following short statement of the means which were being taken and the progress which had been made towards the attainment of the institute the establishment of which had been suggested by the faculty and approved by the Senate of the University.

In the summer of last year the Senate appointed a small committee of appeal consisting of two senators who represent the faculty, Dr. J. Kingston Fowler and Sir Cooper Perry, the dean of the faculty, Mr. Butlin, and Dr. Lauriston E. Shaw, its honorary secretary. Dr. Fowler and Mr. Butlin were appointed joint treasurers, the former to represent the Senate and the latter on behalf of the faculty. The duty of drawing up an appeal for funds was intrusted to this committee and it was determined that in the first instance the appeal should not be made more public than was implied in sending a copy of it to every member of the Faculty of Medicine. It was hoped that some individual or individuals possessed of ample means might be found willing to furnish a sufficient sum of money to build and to equip, if not to endow, the institute so that it might not be necessary to issue a general appeal. That expectation had not at present been fulfilled, probably for reasons which would be referred to later. At one time, however, it was believed that successful negotiations towards this object would be carried through. In November last, on the motion of Dr. Fowler, the Senate determined to issue publicly through the press an appeal for funds to build, to equip, and to endow the institute. To a meeting of the Faculty of Medicine it must be a matter of interest that this, the first public appeal of the Senate for money, was made on behalf of the needs of medical education. The drawing up of the appeal and the manner in which it should be issued were again left to the appeal committee.

On Dec. 18th the letter of appeal appeared in a large number of lay and medical papers and was commented on very freely by both, and in every instance, so far as Mr. Butlin was aware, most favourably. In fact, no appeal of the kind had ever been better received. In January a short letter in favour of the establishment of the institute was addressed to Lord Rosebery, as Chancellor of the University, signed by

the treasurers or chairmen of nine of the hospitals to which medical schools are attached. The only names absent were those of the treasurers of King's College and University College Hospital, who excused themselves from signing on the ground that in the institutions with which they were connected the teaching of science is not confined to medical students.

On Feb. 1st Mr. Butlin received a letter from Sir Dighton Probyn, the Keeper of the Privy Purse, stating that the attention of His Majesty had been directed to the defects arising from the want of concentration of the teaching of the earlier subjects of the medical curriculum in London. The letter concluded in these terms: "As the King now learns that the University of London is making an attempt to remedy this defect by the establishment of an Institute of the Medical Sciences under its proper control, where the concentration of medical teaching will be carried out with every prospect of success, I am commanded by His Majesty to inform you that he is willing to contribute 100 guineas towards this Medical Institute should the scheme be carried out."

Mr. Butlin stated that the attention of His Majesty the King had been directed to the subject by Sir Francis Laking, whose strong interest in the welfare of the profession and in medical education was well known. He begged members of the faculty individually and collectively to do their utmost to assist the appeal committee. Owing to the scarcity of money the present time was peculiarly unfavourable to any and every form of appeal for funds and this appeal was not likely, without some explanation of those familiar with the facts, to be attractive to the general public. Medical education in London had always been carried on as a private enterprise and was regarded as so profitable to those who were engaged in it that an appeal for funds on its behalf seemed to many persons almost in the light of an impertinence. In spite of these difficulties he would point out what had been done in the course of eight weeks by the four persons who constituted the appeal committee. The appeal had been most favourably received by the lay and medical press, had been recommended by the treasurers of nine of the hospitals to which schools had been attached, and had been graciously and liberally responded to by His Majesty the King. The committee had received promises of donations to the amount of about £8000, including contributions from the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England. The University was indebted to Dr. Fowler, not only for his own handsome subscription of £250 but also for interesting Mr. Alfred Beit and Messrs. Rothschild in the proposal with the result that they had contributed £5000 and £500 respectively. If so much could be done in the face of serious difficulties in so short a time by so small a number of men what might not be done in the course of a few months by the largest and most influential faculty of medicine in the world? Amongst its members were men who had access to the houses of the richest and most powerful individuals in London and throughout the kingdom. It would be an eternal disgrace to the faculty if it could not succeed in interesting the public in this important educational scheme and in obtaining funds not merely to build and to equip the institute but to endow it handsomely for teaching and research.

Mr. H. W. PAGE moved and Sir FELIX SEMON seconded:—

That the Dean be requested to convey in suitable terms an expression of the gratitude of the Faculty of Medicine to His Majesty the King.

The motion was carried by acclamation.

THE IMPERIAL YEOMANRY HOSPITALS REPORT AND SIR ALFRED FRIPP.

THE following letters have passed between Lady Howe, as chairman of the Editing Committee of the Imperial Yeomanry Hospitals' report, and Sir Alfred Fripp relative to his evidence before the Commission on the War in South Africa:—

I.

11th Feb., 1904.

DEAR LADY HOWE,—In the course of the correspondence which has passed between us you take exception to certain views relative to the book on the Yeomanry hospitals expressed by me in the evidence I gave before the Commission on the War in South Africa. The statements in which these views were expressed were "that I did not think that the contents of the book should be regarded or trusted as the great authority on the management of hospitals in the field," that "it contained many misleading statements," that "the statistics in it were in many points inaccurate and might be called, if it was a money matter and was done in the City, 'cooked' so as to make an impressive number of figures," and that I knew that "a whole lot of statements as to services rendered and that sort of thing were simply and absolutely untrue," and that there was "no other word to adequately describe some of the statements and many of the inferences led up to."

From yourself and others I now know that not only was much pain caused by these statements, but that my view of the facts on which they were founded has been strenuously challenged. While I must ask you to accept my assurance that I gave this evidence in perfect good faith and as the expression of opinions which I had honestly formed, I also now ask you to let me say that on reflection I think my conclusions were hastily come to and that even if they had been expressed in less sweeping language they are liable to a construction which goes beyond what was justifiable. The questions put to me were unusual, came unexpectedly, and took me by surprise. I was under the impression that I was answering a scientific question as to whether the scheme of organisation of the Yeomanry hospitals was such as I considered scientifically perfect and as such adequately described in the book. I replied hastily and I see on looking at the words I used that my language went beyond a mere expression of a simple opinion and I wish as handsomely and completely as I can to express my regret for what has been construed as allegations against the good faith of some of those with whom I was associated. To begin with my observations upon the Yeomanry hospitals were meant to be confined to the only one of which, as the opening statement of my evidence indicated, I had practical experience—namely, that at Deelfontein. Of the working of the Imperial Yeomanry hospitals in the Transvaal and of the Yeomanry field hospital and bearer company I had no practical experience. I expressly stated in my evidence that I did not go north of Kronstadt and I had, and have, formed no opinion about them. As regards Deelfontein, I wish, in justice to myself, to say that I had in my possession written returns made on the spot which led me to doubt the accuracy of the figures upon the point of the entries as to patients and the occupation of beds. It was these returns which I had in my mind when I expressed myself in answer to an unexpected question. I now find, however, that these returns have been challenged by people whose integrity I did not, and do not, for a moment intend to question and for whom as individuals I have much respect. It is possible that I may have been right and that they, and not I, have been misled, for in such a scene of hurry as prevailed in the early days of the hospital at Deelfontein it may well be that one or other of us was misinformed. What I hope is that my assurance will be accepted that I spoke under an impression which may have been erroneous but which was formed on what I considered to be good grounds. I still think that, judged by purely scientific standards, the statistics used in the book would require more sifting before the whole of them could be accepted as the basis of a fully tested scheme for an army hospital system in the time of war. With this qualification I unreservedly express my regret for statements which have given pain. If I have used language about the services they rendered which has given pain to those with whom it has been my privilege to be associated in a memorable patriotic endeavour I trust that they will accept this explanation and believe that what I intend is to convey to them a full expression of regret. Yours sincerely,

(Signed) ALFRED D. FRIPP.

II.

11th Feb., 1904.

DEAR SIR ALFRED FRIPP,—On behalf of myself and the Editing Committee of the Imperial Yeomanry hospitals report I have pleasure in accepting the explanation and expression of regret contained in your letter in the spirit in which they are offered.

Yours sincerely,

(Signed) GEORGIANA HOWE.

MEDICINE AND THE LAW.

An Action against Medical Men in Ireland.

IN a somewhat remarkable action a young man in Ireland recently sued two medical men, one of whom was his brother-in-law, for conspiracy, false imprisonment, and assault in connexion with placing him in a lunatic asylum. Owing to their conduct he claimed that he had been deprived of property by his father who had altered the dispositions in his will. At the trial of the action the jury negatived the charges of conspiracy and false imprisonment but disagreed with regard to the assault, and the judge, in giving judgment for the defendants, deprived the second medical man, Mr. N. J. Meehan, of his costs on account of an irregularity in connexion with the certificate which he had signed. The Court of Appeal at Dublin has now upheld the verdict of the jury and has refused to grant the plaintiff a new trial, and in doing this has awarded to Mr. Meehan his costs, considering that he was influenced by no malice or other improper motive and that consequently he had done nothing to deserve deprivation of them. The nature of the attack upon the two defendants may be judged from the fact that the father who had desired not to leave his property in the control of his son had himself been one of the most firmly convinced of his son's alleged mental condition and been directly concerned in placing him under treatment. Under the English Lunacy Act of 1890 a medical man signing a

certificate, or any person doing anything in pursuance of the Act, is not liable to legal proceedings if he has acted in good faith and with reasonable care. There does not, however, appear to be any provision of this kind in the Acts relating to lunacy in Ireland.

Lead in Cream of Tartar.

At Stratford police-court on Feb. 13th a fine of £5 was inflicted upon a defendant for selling cream of tartar in which lead was found in the proportion of three-quarters of a grain to the pound. The presence of the lead was attributed to contact with lead vessels in the process of manufacture. Evidence was given as to the cumulative nature of the poison and it was stated that a case of illness had been traced to lead present in cream of tartar.

Litigation over the Sale of a Practice.

The action of Gibson v Ross, tried on Feb. 17th by Mr. Justice Walton and a common jury, presented no features which are not unhappily common to such cases. It was brought to recover money due under a promissory note given in respect of the purchase of a medical practice and the defendant counter-claimed for the cancellation of the promissory note, the repayment of money already paid by him, and other relief in respect of his bargain on the ground that the value of the practice had been misrepresented by the vendor. The defendant was unsuccessful in respect of the issue thus raised and the plaintiff obtained judgment upon the claim and counter claim. The only observation to which such a case can give rise (besides the obvious one that purchasers of medical practices should make very careful inquiries before they buy) is that such disputes had far better be settled by arbitration than fought out in a court of law. There is generally no evidence which could not be more fully appreciated by a carefully selected arbitrator than by a jury and the undesirable publicity given to damaging allegations and recriminations brought by one professional man against another would be avoided.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9075 births and 5420 deaths were registered during the week ending Feb. 20th. The annual rate of mortality in these towns, which had been 19·4, 17·2, and 18·4 per 1000 in the three preceding weeks, rose again to 18·5 per 1000 last week. In London the death-rate was 17·8 per 1000, while it averaged 18·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·3 in Tottenham, 9·6 in Hornsey, 11·0 in Stockton-on-Tees, 11·4 in Handsworth (Staffs.), 11·6 in East Ham, 12·0 in Northampton, 12·2 in Leyton, and 12·3 in Croydon; the highest rates were 23·9 in Nottingham and in Liverpool, 24·1 in Salford, 24·3 in Oldham, 24·9 in Preston, 25·6 in Plymouth and in Warrington, 25·8 in Merthyr Tydfil, and 27·9 in Bootle. The 5420 deaths in these towns last week included 493 which were referred to the principal infectious diseases, against 497, 412, and 449 in the three preceding weeks; of these 493 deaths 191 resulted from whooping-cough, 119 from measles, 70 from diphtheria, 48 from diarrhœa, 37 from scarlet fever, 21 from "fever" (principally enteric), and seven from small-pox. In Croydon, Southampton, Reading, Walsall, Aston Manor, York, and in nine other smaller towns no death from any of these principal diseases was registered, while they caused the highest death-rates in Norwich, Stockport, Wallasey, St Helen's, Burnley, Preston, Leeds, Rhondda, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Norwich, Stockport, Warrington, Preston, Huddersfield, Leeds, Sunderland, and Rhondda; from scarlet fever in Merthyr Tydfil; from diphtheria in Willesden, Hanley, and Salford; from whooping cough in Portsmouth, Wallasey, Liverpool, Wigan, and Gateshead; from "fever" in Preston; and from diarrhœa in Rhondda. Of the seven fatal cases of small-pox registered in these towns last week two belonged to Hull and one each to London, Derby, Wigan, Manchester, and Gateshead. The number of small-pox cases remaining under treatment in the Metropolitan Asylums hospitals, which had been 21, 25, and 24 at the end of the three preceding weeks, had risen again to 29 at the end of last week; nine new cases were admitted during the week, against four, eight, and three in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, Feb. 20th, was 1620, against 1651, 1657, and 1644 on the three preceding Saturdays; 143 new cases were admitted during the week, against 168, 169, and 162 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 429, 347, and 324 in the three preceding weeks, rose again to 349 last week, and were 75 above the number in the corresponding period of last year. The causes of 63, or 1·2 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Manchester, Salford, Leeds, Newcastle-on-Tyne, and in 50 other smaller towns; the largest proportions of uncertified deaths were registered in West Bromwich, Birmingham, Liverpool, Warrington, Blackburn, Preston, Sheffield, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·4, 18·5, and 19·2 per 1000 in the three preceding weeks, further rose to 22·2 per 1000 during the week ending Feb. 20th, and was 3·7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 18·1 in Edinburgh and 19·4 in Leith to 24·7 in Greenock and 25·8 in Dundee. The 733 deaths in these towns included 26 which were referred to whooping-cough, 19 to measles, 18 to diarrhœa, six to diphtheria, five to small-pox, and one to "fever," but not any to scarlet fever. In all, 75 deaths resulted from these principal infectious diseases last week, against 62, 44, and 72 in the three preceding weeks. These 75 deaths were equal to an annual rate of 2·3 per 1000, which was 0·6 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 16, 15, and 24 in the three preceding weeks, further rose last week to 26, of which six were registered in Aberdeen, six in Leith, five in Dundee, four in Glasgow, three in Edinburgh, and two in Paisley. The deaths from measles, which had been 12, seven, and 21 in the three preceding weeks, declined again to 19 last week, and included eight in Glasgow, five in Dundee, four in Paisley, and two in Greenock. The fatal cases of diarrhœa which had been 17, 11, and 20 in the three preceding weeks, decreased again last week to 18, of which 15 occurred in Glasgow. The deaths from diphtheria, which had been three in each of the two preceding weeks, rose to six last week and included four in Glasgow and two in Aberdeen. The fatal cases of small-pox, which had been three, three, and one in the three preceding weeks, rose again last week to five, of which three were registered in Greenock and two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 128, 129, and 126 in the three preceding weeks, increased again to 167 last week, but were 58 in excess of the number in the corresponding period of last year. The causes of 21, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·6, 30·5, and 27·2 per 1000 in the three preceding weeks, rose again to 29·7 per 1000 during the week ending Feb. 20th. During the past four weeks the death-rate has averaged 28·3 per 1000, the rates during the same period being 18·1 in London and 16·7 in Edinburgh. The 216 deaths of persons belonging to Dublin registered during the week under notice were 18 in excess of the number in the preceding week and included 16 which were referred to the principal infectious diseases, against 14, 12, and ten in the three preceding weeks; of these, nine resulted from whooping-cough, three from "fever," two from diarrhœa, one from measles, and one from diphtheria, but none from either small-pox or scarlet fever. These 16 deaths were equal to an annual rate of 2·2 per 1000, the death-rates last week from the principal infectious diseases being 1·6 in London and 0·6 in Edinburgh. The fatal cases of whooping-cough, which had been 11, nine, and six in the three preceding weeks, rose again last week to nine. The deaths

referred to "fever" numbered three last week, against one in each of the three preceding weeks. The two fatal cases of diarrhœa corresponded with the number in the preceding week. The 216 deaths in Dublin last week included 43 among children under one year of age and 64 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a slight excess over the respective numbers recorded in the preceding week. Five inquest cases and three deaths from violence were registered, and 93, or more than 43 per cent., of the deaths occurred in public institutions. The causes of six, or nearly 3 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: H. W. Macnamara to the *President* for three months' hospital study; H. Holyoake to the *Resolution*; J. H. Beattie to the *Andromeda*; and D. T. Hoskyn to the *Crescent*. Staff Surgeon: H. W. Finlayson to the *Scylla*. Surgeons: A. E. Merewether and W. K. D. Breton to the *Crescent*; R. Dickinson to the *St. Vincent*; R. Kennedy to the *Andromeda*; and J. Martin to the *Scylla* and to the *Terpsichore*.

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned gentlemen have been appointed Surgeons:—Edward John Steegman and Herbert Robert Power (dated Feb. 13th, 1904).

ROYAL ARMY MEDICAL CORPS.

The date of the promotion of Lieutenant-Colonel J. F. Williamson, C.M.G., is Nov. 20th, 1903. The date of the reversion from the Seconded List of Captain T. H. M. Clarke, C.M.G., D.S.O., is Nov. 23rd, 1903.

The undermentioned Lieutenants to be Captains (dated Jan. 29th, 1904):—A. J. W. Wells, G. F. Sheehan, H. H. Scott, H. A. Bransbury, M. W. Falkner, R. N. Woodley, E. Ryan, E. E. Parkes, J. V. Roche, A. J. Hull, R. V. Cowey, J. Conway, J. H. Barbour, F. E. Robinson, S. Mason, J. S. Bostock, and A. H. McN. Mitchell.

Lieutenant A. C. H. Gray is seconded for service under the Foreign Office (dated Feb. 4th, 1904). Captain and Brevet Major A. F. Tyrrell is placed on half-pay on account of ill-health (dated Feb. 11th, 1904). Captain R. M. Le H. Cooper retires on a gratuity (dated Feb. 13th, 1904).

The undermentioned gentlemen to be Lieutenants on probation (dated Jan. 30th, 1904):—Godfrey Faussett Rugg, Douglas Stokes Brownlie Thomson, Arthur Samuel Arthur, John Fairbairn, Robert Grenville Anderson, Leonard Bousfield, James Henry Douglass, Dumaresq Le Bas, Robert Robinson Lewis, Charles Harold Turner, Frank Herbert Noke, George Elliott Cathcart, Eugene Christopher Whitehead, Travis Clay Lucas, John Archbold Turnbull, William Wiley, Richard Brassey Hole, Alexander Loftus Otway, Walter Frederick Hamilton Vaughan, Montague Frederick Grant, Howard Harding, David Patrick Johnstone, Edward Henry Milner Moore, Frederick Joseph Garland, Michael David Ahern, Harry Bertram Connell, George Sullivan Clifford Hayes, Sidney Clement Bowle, Alban Anderson Meaden, and Robert John Cahill. The undermentioned Lieutenants are seconded under the provisions of Article 349 of the Pay Warrant: R. G. Anderson (dated Jan. 30th, 1904), S. C. Bowle (dated Jan. 30th, 1904), and F. H. Noke (dated Jan. 30th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Dorsetshire: The undermentioned gentlemen to be Surgeon-Lieutenants:—Thomas Alfred Walker (dated Feb. 20th, 1904) and Telford Telfordsmith (dated Feb. 20th, 1904). 7th Lancashire: Joseph Grant-Johnston to be Surgeon-Lieutenant (dated Feb. 20th, 1904.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant V. Graham, 2nd Volunteer Battalion the York and Lancaster Regiment, to be Surgeon-Lieutenant (dated Feb. 20th, 1904); Surgeon-Lieutenant N. P. Watt to be Surgeon-Captain (dated Feb. 13th, 1904).

The notification which appeared in the *London Gazette* of Feb. 2nd, 1904, stating that Surgeon-Captain W. P. Peake ceased to belong to the Army Medical Reserve of Officers, is cancelled.

THE ITALIAN RED CROSS ASSOCIATION.

The public utility of the Associazione Italiana della Croce Rossa was recognised by a law dated March 30th, 1882. The society is allowed to coöperate with the sanitary department of the army by providing war hospitals, which are organised exactly like the army field hospitals and hospital trains, and by establishing infirmaries at railway stations. It is also empowered to take charge of, and to distribute, the gifts destined for the benefit of soldiers on active service and to set up an information office where friends and relatives can obtain information regarding combatants on both sides. The president of the central committee of the association is named by the King on the proposition of the Ministers of War and Marine. When troops are mobilised this official becomes the sole intermediary between the society and the Ministers. The agents who accompany the forces are under the orders of the military authorities and must conform to military rules. In recruiting its *personnel* the society can only engage men who, except that they may belong to the national militia, are entirely free from military obligations. In 1902 the association had about 25,000 members and disposed of resources, cash, and material valued at upwards of 6,500,000 lire. It was able to place the following equipment at the disposal of the Minister of War: eight hospitals of 100 beds each, 41 hospitals of 50 beds each but capable of expansion to 100 beds, 54 mountain ambulances, 244 dressing posts for railway stations, 15 hospital trains, two river ambulances, two hospital ships, and eight depôts for sanitary material. The *personnel* of the society is exercised as often as possible and to this end it always takes part in autumn manœuvres. In 1900 six field hospitals were mobilised, as well as one mountain ambulance and two hospital trains (one in Sicily and the other at Bari). The society has also taken a share in aiding the agricultural population of the Roman Campagna which every year is decimated by malaria. Since 1899 eight ambulances have done duty in the most exposed parts of this insalubrious region. As may be supposed the Red Cross Association is very popular in Italy. In addition to this admirable organisation there is another association in Italy—namely, that of the Italian Military Knights of Malta—which undertakes to afford aid to the sick and the wounded in war time. By special favour this society enjoys complete autonomy as regards its internal affairs but on service the agents are, of course, under military control. The members wear the red cross as well as the cross of their order. At present the society possesses three hospital trains, each fitted for 280 patients.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals and Fleets William Macleod, C.B., R.N. (retired), on Feb. 17th, at his residence in Mornington-avenue, West Kensington, aged 84 years. In 1842 he entered the Royal Navy as an assistant surgeon and served on the China Station from 1845-47. Under Admiral Sir Thomas Cochrane he was landed from the *Agincourt* in medical charge of the detachment of Royal Marines and took part in the capture of the forts on the river Borneo and the city of Bruni. During the Crimean War he was surgeon of the *Driver* in the Baltic and of the *Madagascar* in 1859 at Rio de Janeiro during a severe epidemic of yellow fever. He received the Sir Gilbert Blane's medal for his official records relating to the epidemic. In 1866 he was promoted to the rank of Deputy Inspector-General and was in charge of the Royal Naval Hospital at Yarmouth until 1875, when he was promoted to the rank of Inspector-General. He retired in 1880, receiving from the Admiralty an expression of its high appreciation of the manner in which he performed the arduous and responsible duties devolved upon him at Yarmouth. He received the Companionship of the Bath in 1880.

Brigade-Surgeon William Henry Harris, A.M.S. (retired), on Feb. 16th, in his seventy-fourth year. He joined the army as assistant surgeon in 1855 and served in the Crimea, taking part in the siege and fall of Sevastopol and the battle of the Tchernaya (medal with two clasps and Turkish medal). During the Indian Mutiny he was present with Colonel Maxwell's column in the operations before Calpee in 1858, proceeding with it to the Alumbagh during the capture of Lucknow. He was at the surrender of the forts of Ahmatee and Shunkerpore, took part in the pursuit of

Beni Madhoo across the Gogra, and the subsequent operations in Oude (medal). He retired in 1886 with the honorary rank of brigade-surgeon.

Deputy-Surgeon General William Bisset-Snell, A.M.D., at his residence, Onslow-gardens, W., at the age of 73 years. He entered the medical service of the army in 1855 and served throughout the campaign of 1860 in North China (medal with two clasps) and was promoted for "meritorious services."

CONVALESCENT HOMES.

An army order states that the convalescent home at Osborne, Isle of Wight,[1] presented to the nation by H.M. the King for the reception of officers of the navy and army, will be opened on April 6th. The accommodation will be divided equally between the two services and will provide for 38 single officers and five married officers (who may be accompanied by their wives). Children will not be allowed to live in the home. Officers will be admitted on the recommendation of the directors-general of the medical departments of their respective services, to whom all applications for admission should be addressed. The Commander-in-Chief in India has been requested to issue similar instructions and the names of officers of the Indian army will be submitted for admission to the Director General of the Army Medical Service. The only payment required will be that laid down in Para. 65. Allowance regulations—viz., 2s. 6d. per diem for each officer or his wife. In connexion with the Convalescent Home at Osborne a hospital will be opened at the same time in London for the reception of officers of the navy and army requiring medical or surgical treatment prior to their removal to Osborne. The daily charge will be the same as that at Osborne.

THE NEWLY CONSTITUTED ARMY COUNCIL.

The omission of the name of any representative of the Army Medical Service on the Army Council has very naturally been regarded as placing that service at a serious disadvantage. The medical department differs from many other departments and has important claims to direct representation, a fact which Mr. Brodrick fully recognised and provided for. The difficulties with which the Army Medical Service has always had to contend has largely arisen from the absence of any direct representative influence and of any opportunity to make its wants properly known in high places. The late War Minister made a real attempt to rectify this and the alteration of his design is a retrograde step.

Correspondence.

"Audi alteram partem."

THE PROPOSAL TO PROHIBIT MEDICAL PRACTITIONERS FROM DISPENSING.

To the Editors of THE LANCET.

SIRS,—Time was when the practice of medicine throughout the country was mainly in the hands of physicians, who reaped the emoluments and left their prescriptions to be dispensed by an inferior body named apothecaries, and their surgery to the barbers of the day. As time went on these apothecaries improved their knowledge and acquirements, divided themselves into surgeons and apothecaries, either separately or in combination, and having obtained the ear of the people gradually nudged themselves into the position of, and shunted, the physicians. The apothecaries and surgeons, in fact, absorbed the cream of the practice in the country, and excepting in the instance of the great minds in the large towns and cities of the land, left but poor skim milk for the hosts of physicians. History, we are told, repeats itself, and one notices that there is at this time in the mind of some a disposition to disregard the teaching of past experience and, following the example of the old physicians, to look down upon the technical practice in connexion with the dispensing of medicines as unworthy of their dignity and gentility. Certainly it may be said to be the experience of the history of the past that those who combined their practice with the oversight of the drugs they supplied were the men who obtained the greatest and most conspicuous reward.

[1] See THE LANCET, Jan. 30th, 1904, p. 320.

But it is not the object of this letter to treat the subject on these lines alone, although the policy may very well form a serious part of the argument. I desire to consider it from a much higher platform than that of personal pecuniary interest. Will it be for the good of the public? This seems to be the first and greatest consideration. In so far as it regards practice amongst the rich in great towns and cities, the dispensing of medicines by the practitioner may not be a very important or necessary factor. With the poorer and working classes it will be a very different matter. They will be obliged to consider cheapness and to save wherever they can, and rich and poor are alike, though from different reasons, prone to consider *cost*. The practitioner who obtains his drugs from the wholesale druggist and gets his living by his advice and attendance can naturally afford to employ the required medicines at a less cost (prime cost) than one who has to get his living out of the profit from the medicines themselves. He is also very careful to obtain medicines that can be relied upon for their purity and perfection, as this gives him confidence in their application. Prescriptions that may be taken to anybody lend themselves easily to cheap substitution and confidence must be weakened by poor results. If the practitioner suggests their being made up by a particular firm some underhand collusion may be hinted at by an unfriendly critic. Of course, at the present time anyone, be he physician, surgeon, or general practitioner, has perfect liberty in this matter to retain or to dismiss dispensing from his practice. But our agitators are not content to leave the members of our profession *free* to act as they think best, but they seek power to tyrannise over the rank and file who think quite differently from them on this subject. Those gentlemen can hardly have had much experience of general practice or country work. Here, and especially in the country, the practitioner must be self-reliant and self-contained; he must be an adept with his tools, whether they be medical or surgical; always ready by day or night to supply at the shortest notice whatever the nature of the case demands. His patients know the man and trust him thoroughly and are sure that they can always obtain from him whatever is required of the very best of quality and whenever needed. Should the preparation of medicines pass from his superintendence this confidence would be greatly shaken and in the case of the poorer classes it would be a positive calamity. The increased cost of the doubled sources of supply would be a serious consideration and would pretty certainly lead to the *run* being upon the physic and the compounder and the *curtailment* on the supervision of the practitioner.

Everyone engaged in full general practice will, I imagine, have a considerable number of patients on the borderland of great poverty. Most of us, I suspect, regard this residuum as a call upon our benevolence and Christian charity. It is easy to do very kind, useful, and acceptable work in this way with no loss to the general profession and but little, and sometimes even no, cost to the individual benefited, and the profession has reason to pride itself on its generous acceptance of this great duty. Generosity towards the wants of the real poor has always been the distinguishing characteristic of the medical profession. The professional man can control and regulate this charitable disbursement effectually and at comparatively small cost to himself if he supplies the medicaments but not so when they are removed out of his ken. Beyond the organised charity of hospitals and dispensaries there exists a numerous class that will not apply to either; though very poor they are very independent and cannot brook charity and wish to pay. It will be a bad day for the profession when it adopts methods which will make it impossible to meet such cases in the most sympathetic and kindest manner.

I know perfectly well that the profession is greatly imposed upon but not by the class of which I am writing. People who can well afford to pay 20 or 30 guineas for an operation are not ashamed to enter a hospital and to get the work done for nothing. But every general practitioner knows, or is soon able to ascertain, as to the means and circumstances of his poorer patients and he need rarely be deceived much about them. Perhaps the best disposed and widest spread charity of the profession is carried on by the general practitioners of the country out of the largeness of their hearts and in the most self-denying, unobtrusive, and effective manner.

It appears to be the wish of some to stigmatise this kind of practice as traitorous to the profession. I cannot think for a moment that the British Medical Association, which

has done so much to advance the interests, honour, and prestige of the profession, will consent to support or to champion any such views. The gentility of the profession depends upon the individual man himself. Is he by education, manners, and conduct fitted to mix in the better ranks of society or is he not? That is the question society will ask. And it thinks neither more nor less of him because he superintends the dispensing of his own medicines than it does of the family lawyer, the welcome guest, who keeps his own offices and superintends the work of his own clerks.

I am, Sirs, yours faithfully,

Huddersfield, Feb. 14th, 1904. SAMUEL KNAGGS.

To the Editors of THE LANCET.

SIRS,—With regard to the proposal to prohibit medical practitioners from dispensing may I be permitted as a general practitioner to bring the following to your notice. We have already druggists prescribing and dispensing, district nurses attending midwifery and prescribing and dispensing medicine, certified midwives, large numbers of well-to-do shopkeepers and the great majority of the working classes paying 1*d.* or less a week into clubs for attendance and medicine, Poor-law authorities doing their utmost to minimise our fees, impecunious parsons and their numerous relatives receiving gratuitous attendance, cottage hospitals, myriads of already dispensed prescriptions on sale in the form of tabloids, microscopic fees, and our "tiller of the soil" who, having owed a bill for three or four years, blandly expects half the amount to be taken off (when the whole sum asked for would be scorned by any self respecting cabman for the same mileage) and who would certainly consider, unless supplied with something tangible in the shape of medicine, that he had received nothing in return for his money.

Again, can we depend on the quality of drugs and the accuracy of dispensing by all druggists? For obviously if a drug is not to hand there is no check on substitution. And though, far from wishing to impute such practices to druggists as a class, yet no large body of men are above suspicion and it is well known that such instances have occurred. Personally, I dislike and think dispensing undignified—a dislike which I am sure is shared by many of my fellow practitioners. At the same time it is obvious that general practice will soon become impossible for men with small means who after years of toil and hundreds of pounds spent to enter the profession will have laboured in vain to gain a livelihood, and in the near future the country doctor will become as extinct as the dodo, and general practice will have to be reserved as a pastime for those of ample means who may treat such cases as have advanced a step beyond the ken of the prescribing druggist, the village nurse, the certified midwife, &c., and the urgency of which is so great that even the frantic exertions on the part of "the lady of the village," with her swift-running motor, would fail to convey suffering humanity to the nearest hospital in time to sing the "Nunc Dimittis."

I am, Sirs, yours faithfully,

Chard, Somerset, Feb. 20th, 1904. NAPIER CLOSE.

To the Editors of THE LANCET.

SIRS,—Nothing, I am convinced, will so uplift the medical profession as the cessation of dispensing by medical men. Not that we are not competent for the task, but that the more imperative claims of other departments of medicine make it necessary that we should utilise the dispensing druggist as we have already the trained nurse. Then, indeed, will the reproach of lack of scientific advancement be removed from the profession in Britain, as it has from our brethren on the continent, and we shall receive our rightful social recognition with the Bar and the Church. It is doubtless the fact that many practitioners must supply medicines to their patients, but even this it is easy to arrange with the druggist, as is done in Dublin, where a pharmacist often arranges to supply all the medicines which a practitioner may order for a certain club for a proportion of the fee—generally one-fourth. Thus, if a medical man take a club worth £20 per year, the druggist agrees to supply all the medicine required for £5. Of course, some confidence and sweet reasonableness are required on both sides; but druggists like to do dispensing in such cases at almost the price of the drugs. A very important point is that the practitioner is not then compelled to confine himself to the few drugs which he would keep in his own surgery but is free to avail himself of all the resources of the Pharmacopœia.—I am, Sirs, yours faithfully,

J. C. MCWALTER, M.A., M.D.Brux., D.P.H.

Dublin, Feb. 20th, 1904.

To the Editors of THE LANCET.

SIRS,—Surely all this talk about compelling medical men to give up dispensing must be a joke; if it is not, then all I can say it is attempting to interfere with the liberty of the subject with a vengeance. When I passed the College and Hall some 46 years ago I gave no undertaking (nor was it expected of me) not to dispense but looked forward to practice with that understanding. If it is to become law in the name of conscience let it not be made retrospective but only to apply to men commencing practice after a certain date, then they on joining the profession would see their way clear. I should like to know who are the men who started this fad of "dispensing with dispensing." I will wager that if a *plébiscite* of the profession were taken the vote would be pretty decidedly "No." Could you, Sirs, kindly undertake to receive at your office a simple "Yes" or "No" as to the desirability of the proposed innovation? A post-card would be sufficient. These things by supineness sometimes slip through and then we say, Who would have thought it? and hundreds of practitioners would be put to serious straits.

I am, Sirs, yours faithfully,

Feb. 16th, 1904. A SUBSCRIBER TO THE LANCET FOR OVER 40 YEARS.

To the Editors of THE LANCET.

SIRS,—If it is possible to make it illegal for a medical man to dispense medicines under a penalty of £100 I would be glad to know if it would not be possible to make it illegal to attend midwifery cases under a similar penalty. Of course, our female population has now an order of professional ladies to attend these cases. Or, say, for a consultant to write a prescription under a penalty of £1000. Consultants could, of course, afford the larger penalty seeing their larger income. I am quite at one with "L.R.C.P." who writes in THE LANCET of Feb. 13th. The Bill would mean ruin to half the general practitioners of to-day. What most people want to know is, Of what benefit is the Bill to be to anyone except the druggist? Is a druggist originating it?

Is the profession as a whole to benefit? Certainly let us look to our *honour* and to our general respectability. Will it not be foolish to ruin ourselves that we may add just a little to either of these good qualities? The general status of the profession will not be much improved by half of us going through the bankruptcy court. Let us attend to that prescribing druggist.—I am, Sirs, yours faithfully,

Feb. 20th, 1904. FAIRPLAY.

THE INQUEST ON WHITAKER WRIGHT.

To the Editors of THE LANCET.

SIRS,—I am glad to have such a kindly critic of my former letter as Dr. William O'Neill of Lincoln who calls in question only that part of it in which I say, "The *bluish tint* of the body and the *fluidity* of the blood are neither separately nor together distinctive of poisoning by prussic acid." In fact, he calls in question only the first half of this twofold assertion—namely, that which relates to the *bluish tint* of the body which he regards as "pathognomonic if seen soon after death."

Now, I do not for one moment deny that both the signs referred to by me as the only criteria adduced by Dr. Freyberger, in addition to the odour, are generally observable in cases of prussic acid poisoning. But what I insist upon is that neither is peculiar to that form of death. Almost any text-book on forensic medicine will serve to refresh our minds on this subject. Since Dr. O'Neill has selected Taylor's I will take Guy's (second edition, 1861). Here are a few extracts: "Sudden death, unattended by hæmorrhage or effusion of blood, is characterised by extensive lividity. ..... Cadaveric lividity is said to be distinguished from the effect of injuries inflicted during life by the seat of the discolouration being in the *rete mucosum* and vascular membrane which lie exterior to the true skin" (p. 213). More important still in view of the particular hue alluded to by Dr. O'Neill, "Death from suffocation would be indicated by violet patches on the surface of the body" (p. 220). Continuing upon death from asphyxia,

Guy says: "After death the body presents the following appearances. Patches of rosy, bright red, or violet discolouration are seen on the face or on other parts of the body as much on the least as on the most depending parts," &c. (p. 223). And he gives the following warning: "It is most important, however, that the medical jurist should bear in mind that the characteristic appearances of sudden death due primarily to the heart, the lungs, or the brain, are not always equally marked; that they may be combined with each other in different proportions, and that a cause usually productive of the one may, in certain circumstances, give rise to the other" (p. 224). Incidentally, Dr. Guy makes the following statement: "In some instances, as in two cases related by Mr. (afterwards Sir James) Paget, death really due to fatty degeneration of the heart was believed to have been caused by poison" (p. 219). Have we not some reason to surmise that at the present time the number of such instances amounts at least to three? Dr. Guy goes on to say: "The nervous shocks of sufficient force to paralyse the heart and to cause instant and speedy death may be caused by strong and sudden emotions," &c. (p. 219).

Of course, the question arises as to what is the specific cause of the "glimmering blue (or violet) colour" (Guy, p. 458) which the blood assumes in cases of prussic acid poisoning. Is it due to a chemical process (1) during life; or (2) after death? The speed with which the tint appeared in the case narrated by Dr. O'Neill points to its being the result of what we may (not quite ironically) call a vital process. But if it be produced by the action of hydrocyanic acid on the iron in the system we might expect a tint more resembling *prussian blue*. However, I need not further discuss this point.

As to the *fluidity* of the blood found in Whitaker Wright's case allow me to refer to the celebrated John Hunter's "Treatise on the Blood," which I have (bound up with his works on Inflammation and Gunshot Wounds, the volume being published as a new edition in 1828). He says: "In many modes of destroying life the blood is deprived of its power of coagulation, as happens in sudden death produced by many kinds of fits, by anger, electricity or lightning, or by a blow on the stomach, &c. In these cases we find the blood, after death, not only in as fluid a state as in the living vessels, but it does not even coagulate when taken out of them" (p. 32). But more cogent still is the following: "We find in many who die suddenly, from a strong impression of the mind, the blood does not coagulate" (p. 29). I therefore think the sentence in my former letter to which reference has been made is fairly accurate.

The letter of "Midlothian" in THE LANCET of Feb. 20th, p. 540, is very forcible, but I think he is in error in saying we were informed that Whitaker Wright obtained cyanide of potassium in capsules. Dr. Freyberger's theory as to the excoriation of the tongue would be negatived by such information. There is, in fact, no proper evidence that the deceased took poison or that he had poison upon him when he left the court, nor was there anything pointing to poison in the manner of his death as observed by five competent persons.

I am, Sirs, yours faithfully,

D. BIDDLE, M.R.C.S. Eng.

Kingston-on-Thames, Feb. 22nd, 1904.

RAYS PROCEEDING FROM ACTIVE MUSCLES AND NERVES.

To the Editors of THE LANCET.

SIRS,—It gives us pleasure to be able to confirm the chief claims of M. Charpentier as to rays given off by active muscles and nerves and we think it only right to publish our results at once in view of the allegations we have heard made that the facts given to the world by the Nancy physicists are mythical. In order that others may verify these results for themselves we will give some details. The experiments are remarkably easy to perform and, to us at least, absolutely convincing as to the actual existence of the rays though we hold no brief for "n" radiation as the cause.

The directions given by M. Charpentier[1] for making the screens should be accurately adhered to. We use hexagonal zinc blende and stick a very thin film on thin paper, a glass slide, &c. Contrary to the general impression we find the effect of the rays seriously diminished by the interposition of a thick background for the fluorescent material. Our best screens are a round patch a centimetre in diameter on very thin celluloid with the zinc sulphide so thinly spread that print can easily be read through it. We excite the screen by holding it near to a source of ultra-violet rays, and let the fluorescent light die away till it has approximately reached the steady stage, then bring underneath it a muscle in a state of contraction, as, for example, the contracting abductor and adductor pollicis of the thumb. The fluorescing screen will then be seen to brighten perceptibly with a rapidity depending on the thickness of the zinc sulphide. One of the most convincing tests is to place a small screen when it is very feebly fluorescing on the floor in a dark room by the side of the foot with the shoe off. It will be invisible by the observer when he is standing upright and he will need to stoop considerably before it becomes visible. If the screen be now placed on the top of the toes and the muscles made active the light will easily be seen and the increase, though considerably diminished, may be observed through the boot. We have tried to estimate the extent of this increase of light and have come to the conclusion it must be fully 100 per cent. when at its best. We arrived at this by measuring the distance at which the spot of light became invisible before the wrist was held behind it and then asking the observer to walk backwards till it again became invisible. These measurements were about five feet without the arm and at least eight feet with it. In addition to observing the effect on the arm the screen was placed over the heart, Broca's convolution, spine, &c. By this means anyone may satisfy himself and those in his company that the light from the screen really does increase, but it is not so easy to prove the matter in print by methods not depending on vision.

The only way that suggested itself to us was to use photography. If the light varied 100 per cent. it should be possible to blacken a negative more or less with it. It doubtless is, but there are difficulties on the way. In the first place the fluorescent film used for judging by vision is only very thinly coated. Secondly, the fluorescence after exposure to light falls rapidly away at first when it is strong and when it arrives at an approximately stable condition is very weak. The negative must therefore be exposed for a long time and this is inconvenient when it must be held over the wrist with the muscles kept at strong tension. We were consequently obliged to coat our screens when used for photography with a thicker film and not wait until the light had fallen to a nearly steady and dull stage. Four impressions were taken on one spectrum plate with one-minute exposure and intervals of two and a half minutes between each exposure. Only the first three exposures have left their image, the second being much less black than the first, and the third almost invisible.

On the next negative we took a photograph of the fluorescing screen without the muscle, then another without the muscle, then a third with the muscle behind, all with the same exposure and, of course, the same development. When the negative is examined it will be seen that although the brightness was falling off, the third impression is just about as dark as the second, showing that the fluorescence of the screen had brightened up under the action of the muscle behind it.

It is perhaps necessary to give a word of caution as to the effect of heat on these fluorescent screens. Heat will both originate and add to fluorescence, whereas at present muscle rays have only been proved to augment the effect. As both act in the same way it is, of course, a little difficult to separate the results, but M. Charpentier has made a number of experiments to prove that the increase of light is not due to heat only. For instance, the rays persist when several layers of aluminium or of cardboard separated by layers of air, thus forming a heat screen, are interposed.[2] He also found that a frog which was at a temperature sensibly lower than that of the air in the laboratory formed a good subject. To prove the point on warm-blooded animals he raised the temperature of the screen above that of the animal and found the result the same.[3] Some of these experiments have been confirmed by us. We are now using calcium sulphide for the screens and think it rather better than the zinc. The possibilities of this method of examining the

[1] Comptes Rendus, Jan. 4th, 1904, p. 45.

[2] Ibid., Dec. 14th, 1903, p. 1050.

[3] Ibid., Dec. 28th, 1903, p. 1278.

human body are immense, such as, for instance, the localisation of nerve centres in the brain, of injury to peripheral nerves, the size of the heart, &c.

We are, Sirs, yours faithfully,

HUGH WALSHAM, M.A., M.D. Cantab., F.R.C.P. Lond.
LESLIE MILLER, A.M.I.E.E.

Feb. 10th, 1904.

*** Our own experiments in THE LANCET Laboratory have confirmed the above observations. Mr. Miller has since pointed out that by simply placing a speck of recently excited calcium sulphide on a thick book—such as, for example, the Medical Directory—a distinct increase in the glow is obvious when the muscles of the hand or leg are contracted underneath.—ED. L.

BILHARZIA HÆMATOBIA.

To the Editors of THE LANCET.

SIRS,—I should be glad to know if there is any treatment otherwise than that of local sedatives for the condition of chronic cystitis and hæmaturia caused by the bilharzia hæmatobia. I take this opportunity of humbly pointing out to the profession the necessity of looking for this trematode in the urine of anyone complaining of bladder or kidney trouble who has lived in the neighbourhood of Rustenburg, Transvaal, for any length of time. My patient has been seen by four medical men, none of whom thought of the true cause of his complaint.

I am, Sirs, yours faithfully,

E. H. WORTH.

Streatham, S.W., Feb. 23rd, 1904.

THE LEGAL AND MEDICAL PROFESSIONS IN IRELAND.

To the Editors of THE LANCET.

SIRS,—The spirit of friendly relationship that formerly existed between the professions of law and medicine and the courtesy that was its natural expression seem to have departed altogether in our times, or to be recalled only by the occasion of social functions outside the sphere of professional work. Anyone who has had experience of the system that presently obtains in the courts cannot fail to have been struck by the unwarranted impertinence—frequently amounting to positive insult—to which medical witnesses are constantly subjected, as if it were a recognised fact that every medical witness must not only be prejudiced but be prepared to sacrifice his professional honour and to degrade his office in the interests of whatever party has employed him.

It is not an infrequent occurrence to find judges priding themselves upon their knowledge of petty medical technicalities and parading it in a series of questions that should certainly arouse indignant protest, if it did not afford compensation in the silent amusement of the doctor who happens to be pilloried in the witness-box. Lectures regarding excessive fees and the unreasonable requirements of medical men are occasionally contributed and irresistibly force one to the conclusion that "Milud" has been a diligent student of the introductory remarks to the advertisements of patent medicines. The bar, of course, takes its cue from the bench, and the method of cross-examination of a medical witness bears frequently a close resemblance to the petty sessions court style where the evidence of a doubtful character is being sifted.

Formerly the cross-examination of medical witnesses was directed to minimise the injuries alleged to have taken place, and the most vigorous investigation of facts did not preclude the observance of that old-time courtesy that was honourable alike to both professions. Now, however, the doctor is subjected to every indignity, his motives are impugned, and his testimony is regarded as at least not above suspicion. That this is the actual state of things can scarcely be gainsaid, the reason for it may be debateable. It does assuredly seem that the present duty of medical witnesses is to resent immediately and resolutely any insulting observations or insinuations addressed to them in a court of justice, whether they emanate from the judge or the counsel.

I am, Sirs, yours faithfully,

Dublin, Feb. 20th, 1904. E. MAGENNIS, M.D. R.U.I., D.P.H.

EXTERNAL STUDENTS OF THE UNIVERSITY OF LONDON.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to express in THE LANCET a complaint of external students of the University of London? The preliminary scientific examination for internal students is divided into three parts: (1) chemistry; (2) experimental physics; and (3) biology. If the candidate passes in either of the parts 1, 2, or 3, or in any two of them, he is only required to repeat those parts in which he was unsuccessful. External students, on the other hand, take the examination in two parts: (1) chemistry and experimental physics; and (2) biology. If a candidate is unfortunate enough to fail in chemistry but satisfies the examiners in physics, or *vice versâ*, the whole of the first part must be taken over again. This is obviously hard on the external student, as he has to take the same papers as the internal student. Again, I believe, there is a similar arrangement in the intermediate examination in medicine and yet the internal degree is looked upon as a better degree. In conclusion, may I invite the opinion of external students on these points?—I am, Sirs, yours faithfully,

Feb. 15th, 1904. A SYMPATHISER.

AN EXPERIENCE AMONG THE RED INDIANS.

(FROM A CORRESPONDENT.)

THE following incident which has just come to the knowledge of the writer will illustrate how little those travellers can learn of the life of the people who are carried from one end of Canada to the other in expeditions made in saloon cars on the line of rail, and yet the life of the people is the chief thing that is worth the knowing.

A young Scotchman, well known to the writer, who had grown tired of doing practically nothing in London, made up his mind last summer to try his luck "out West." Accordingly he set out for Canada and in due course found his way to Manitoba. At first he tried the inevitable plan of getting work on a farm but not being satisfied with this set about to look for something more interesting. Being a man of some ability and exactness of method he was offered employment with a survey party which was then going out on a trip northwards. As soon as winter had set in and put a stop to their operations they made ready to return to civilisation. Driving across the frozen prairie in a wagon drawn by several horses (probably a wagon-box on runners), they came to a slough which was frozen over and attempted to cross to avoid a detour. A slough is a hollow or dip in the rolling prairie where water settles in wet seasons but generally not more than some few feet deep and always surrounded by a belt of willow-scrub. When they were half-way across the ice broke and the whole outfit went through into the water. Before they could unhitch the horses two of the animals were drowned, but by dint of extraordinary exertions they managed to get the rest of the horses to drag the wagon out. The men were soaked to the skin, hands and noses were frozen, and then their clothes froze on them as they stood. This, however, is a not uncommon occurrence in a North-West winter.

The young Scotchman now began to have trouble with his left hand, into the palm of which he had happened to drive a nail not long before leaving home, and the wound thereby caused had never satisfactorily healed. Any wound or tender place of this kind is always the first point which the frost will attack. Next day the arm became very painful—possibly there may have been blood poisoning—and began to swell. But there was no assistance at hand and the nearest medical man was 70 miles away, so that there was no alternative but to set out to find him. The young fellow took a horse and rode off, but the suffering was so great that the pain became unendurable. About 30 miles on the way he came to a lodge of Indians encamped on the prairie and being thoroughly exhausted upon seeing a fire in one of the teepees he went in and asked if they would let him sit down and warm himself. A teepee is the Indian tent made of skins sewn together with thongs of hide and

stretched over poles which pass through a hole at the top. When the Indians move off the skins are folded round the poles and every squaw marches off with her own tent. The Indians grunted assent and made way for him when he showed them his hand and arm. They looked serious and chattered to one another; an ancient squaw, with her face shrivelled into a mass of wrinkles, came over and carefully passing her hand over the injured limb, shook her head ominously. Then there were much talk and consultation; they built up a great fire and set some water to boil. When everything was ready they lifted him up and, carrying him across (to throw him into the fire, as he expected—though he did not care what they did), set him down where he could feel the full effect of the heat.

The old squaw, having carefully rolled up the sleeve, took the wounded hand in hers and gently rubbed her other hand to and fro over the swelling and up and down the whole arm, all the while chanting a weird song. At the same time all the other squaws, from the oldest to the youngest, also took up the chant and forming themselves into a circle walked round and round the two during the whole of the operation. The young fellow's mind was so acted upon by the effect of the mysterious chanting that his attention was entirely taken away from the pain he was suffering, which, of course, was the real object or origin of the strange performance. He became so hot that he fell into a profuse perspiration, and when the squaw was satisfied with the results of her treatment she made a poultice from some particular leaves collected for such purposes and bound it over the hand. The Indians then lifted up the white man and carried him into the inner part of the tent, shut off from the rest, where he was laid down and covered with skins. Here he slept for 18 hours. When he awoke the pain and swelling had entirely gone from his arm and being now in a more fit state to complete the remainder of his journey he went on to the medical man and told him his experiences. The medical man was so satisfied with what had been done that he said he should now be able to confine his attention to the wounded hand, but that if the patient had not undergone the treatment of the squaw he would have had to lose his arm.

The above is a remarkable and exact instance of the primitive methods of what is called the untutored savage, but though the writer has had many curious experiences with the red men he has never before met with a case of this particular sort where a white man was concerned. The young Scotchman entirely recovered and is now hard at work with the contractors for the new railway through Saskatchewan territory.

THE MUDDLE OF THE LAW OF LUNACY.

(FROM A CORRESPONDENT.)

IN the fifth schedule of the Lunacy Act, 1890, reference may be found to no fewer than 15 earlier legislative attempts made during the reign of Queen Victoria to define the legal position of lunatics. With the Act of 1890, especially after its amendment in 1891, some degree of finality was hoped for and things worked fairly satisfactorily until sundry ill advised persons who could not let well alone were so injudicious as to invite interpretations of various provisions from certain high authorities. The Commissioners in Lunacy, the Local Government Board, and the Home Office, together with the Law Officers of the Crown and other eminent lawyers having tendered their opinions, chaos is come again and the Act has been demonstrated to be an example of how not to do it which might excite envy in the bosom of the most adhesive Barnacle who ever ruled the Circumlocution Office.

Probably any medical man who has had no experience of lunacy work would, if asked about the way to deal with a lunatic, reply that there is no difficulty—that it is all a matter of Section so-and-so of that lucid Act of 1890 which is quoted in his text-books. Let us, however, consider how things are in reality. It is, we will suppose, brought to the knowledge of a relieving officer that a certain individual is behaving in an erratic manner which raises doubts as to his sanity. If the individual is already in receipt of relief the matter is somewhat simplified, but as a rule this is not the case. The relieving officer fresh to his duties may turn up his copy of the Lunacy Act and finding that he has to deal with a person who, in the words of Section 13 (1), "is not a pauper and not wandering at large," may naturally decide that this section is the one under which he should proceed. Doubt may arise in his mind when he considers that, although not a pauper, the lunatic will, from lack of pecuniary resources, become chargeable to the parish or union when he gets to the asylum and the officer may begin to wonder whether Section 14 (2) is not the one he wants. His conviction that it is will be strengthened by a perusal of Section 18 which allows a person who is "in such circumstances as to require relief for his proper care" to be regarded as a pauper. He will, however, be distressed to find that in the opinion of such a distinguished authority as Mr. Macmorran, K.C., "a relieving officer would not be entitled to protection under Section 330" (which safeguards persons who act in good faith and with reasonable care) "if he deliberately dealt with a non-pauper under the sections relating to paupers"—that is, other than perhaps Section 20. The further knowledge that in March, 1902, the Commissioners in Lunacy held that "when an alleged lunatic, though not actually in receipt of relief, is in such circumstances as to require relief for his proper care he is a pauper within the meaning of the word as used in the Lunacy Acts and that proceedings for his removal to an asylum should be taken under Section 14, not under Section 13, of the Lunacy Act, 1890," will probably reduce him to a condition of distraction and as in that state he will easily be able to convince himself that "it is necessary for the public safety" that "the alleged lunatic should ..... be placed under care and control" he will convey the said lunatic to the workhouse under Section 20.

Within three days the relieving officer must "take such proceedings with regard to the alleged lunatic as are required by this Act." "Such proceedings" can only be the giving notice to a justice which is referred to in other sections. In London arrangements are usually found which enable a visit by a justice to the alleged lunatic at the workhouse to be made within the three days and we will suppose that the arrangements are effective. It may be noticed at this stage that the case is not necessarily one for an asylum: it may be merely a temporary derangement due to alcohol, pyrexia, or the puerperal state, and likely to require but a few days' treatment. Again, the case may be on the border line of sanity or present features of special difficulty, so that the medical man wishes to keep it under observation for a short time before certifying. One of two sets of circumstances therefore arises. The justice (1) may desire to make a "summary reception order" directing that the lunatic "be received and detained in the institution for lunatics named in the order," or (2) he may not. In either event there is likely to be a deadlock.

The Act requires that the institution should be named in the order and this is taken to mean that the name must be inserted in the order before the justice signs it. In May, 1901, as a consequence of certain scandals in connexion with the removal of pauper lunatics to private asylums, the Home Office addressed to clerks to county and borough justices, stipendiary magistrates, and the metropolitan police magistrates a circular in which it is laid down that "the Law Officers of the Crown have advised that unless the name of the asylum to which the lunatic is to be removed is stated in the reception order when it is made the order cannot legally be acted on, and Mr. Ritchie thinks it very important that the requirement of the Lunacy Act in this matter should be complied with." Further, justices "should very carefully ascertain that there is a deficiency of room or that there are some special circumstances before they authorise a lunatic to be sent to some institution other than the county asylum." But in practice it is often impossible to get a vacancy in a county asylum allotted in the time. The Commissioners in Lunacy in a letter to the secretary of the Local Government Board, dated September, 1901, say that they are "fully aware of the difficulty which in the County of London arises from the necessity of inserting in a summary reception order the name of the particular asylum to which the pauper is to be removed" and they can suggest nothing better than "immediate communication" with the clerk to the asylum committee in the pious hope that "such a communication will always receive prompt attention."

If, on the other hand, the justice does not desire to send the case to an asylum the position is just as awkward. A letter from the Local Government Board to the clerk to the guardians of the poor of the parish of Fulham, dated July,

1902, contains this view of it: "It seems to the Board that where a person is removed to the workhouse under Section 20 of the Act as an alleged lunatic for whom temporary accommodation is needed the effect of the decision of the justice to make no order in the case is to release the man so far as he is an alleged lunatic." The case may, however, be one where, in the words of Section 21 (1), the justice is "satisfied that it is expedient for the welfare of the lunatic or for the public safety that the lunatic should forthwith be placed under care and control" and in which it appears to him that "there is proper accommodation for the lunatic in the workhouse." Yet in the opinion of the Law Officers of the Crown, as stated in a Local Government Board circular of July, 1901, the justice may *not* legally make an order for detention in accordance with that section. The only person who can do anything is therefore the medical officer and as he is not, in the opinion of the Local Government Board, *bound* to act under Section 24 and as, further, to detain a person whose insanity is of such a character that the justice will not make a reception order is to assume a very serious responsibility, the difficulty of his position is obvious.

It may be wondered how in these circumstances a pauper lunatic is ever dealt with at all. To avoid complications it need only be said that the methods employed are capable of considerable improvement.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Formalin in Milk.

A MILK dealer has recently been prosecuted for selling milk containing formalin. Two samples were examined, one of which was found to contain formalin in the proportion of 1 part per 100,000 and the other 5 parts per 100,000. Dr. J Robertson, the medical officer of health, said that though formalin was a violent irritant poison very few cases of its effects on the human subject had been reported because the solution was one which, on account of its highly irritating odours, could not be taken by anybody in a concentrated form either for suicidal purposes or by accident. The effect of formalin, however, in small doses was to retard nearly every one of the digestive processes. It had been found that children fed on formalinised milk for only a short period showed well-marked evidence of the injurious effects of this poison. In his opinion the amount in the samples of milk in question was certainly injurious to the health of young children whose food was chiefly milk and it would be even more injurious to delicate children. Mr. Liversudge, the city analyst, said that Birmingham was singularly free from this preservative. About 93 per cent. of the samples examined by him were free from it. The defendant stated that he had been assured that no poisonous or injurious effects would follow upon the use of formalin and promised to abstain from employing it in the future. The bench held that there seemed to be a degree of ignorance as to the nature of formalin and as this was the first prosecution inflicted a fine of £1 and costs in the first case, with costs in the second.

Electrical Tramway Accident in Wolverhampton.

Some weeks ago I detailed a case in which horses had been electrocuted by the current conveyed in overhead wires and now a similar accident has taken place in connexion with a totally different system of electric traction. At Wolverhampton the method adopted is that known as the Lorain system. By this method the electricity is supplied to the motor of the car by surface contact and when it was introduced objection was raised that if the boxes or studs became "alive" they would be dangerous to foot passengers or to animals. Though it was denied that any danger would arise complaints have been made by drivers that their horses have received shocks. Twelve months ago a horse passing along the tram lines fell dead. It was not certain whether it was electrocuted or died from natural causes. There was no litigation but the owner was compensated. A few days ago a flock of sheep was being driven through Chapel Ash, a suburb of Wolverhampton through which the trams run, to the Smithfield when one of the animals trod upon a contact box and immediately fell, rolled over, and died. A collie dog which was with the drover went over to the sheep and smelt it; possibly it also touched the box. What is certain is that the dog gave a yell of pain, leaped into the air, and fell dead. Immediately after this a horse which was being driven in a cart touched the same box with one of its hoofs. The animal at once fell upon its knees and was seized with a violent fit of shivering, evidently the result of an electric shock. The electrical engineer of the corporation having been summoned examined the box and attributed the accident to the contact plate having been damaged by a faulty car. A person who saw the occurrence stated that a piece of wire had fallen across the contact box and that when the car passed over it there was a loud report and that the conductor of the car picked up the wire and took it away. Immediately afterwards the animals passed over the spot with the result above mentioned.

Death from a Mistake in a Prescription.

A coroner's jury at Bloxwich has recently returned a verdict of death by misadventure in the case of a child, aged four weeks, who came by its death as the result of a mistake in the reading of a prescription. The child in question suffered from pains in the stomach and was taken by the mother to a medical man by whom a prescription was given. The prescription was taken to a druggist to be made up and there was some discrepancy in the evidence as to whether he was told it was for a baby or not. The druggist stated in evidence that he was under the impression that the prescription was for the husband of the woman. In the medicine he put 61 drops of morphine, which in four ounces of medicine would not be very much for an adult. The figure in the prescription which he took for 61 was very difficult to make out and was in reality intended for 6. If he had known it was for a baby he would not have thought of putting in 61 drops—in fact, he would not have made the medicine up at all. Another medical man, not the one who had given the prescription, who was called in to see the baby before death, said he had examined the prescription which had nothing on it to show the age of the patient as was usual with hospital prescriptions. The item as to morphine was very difficult to read and if he had been under the impression that it was for an adult he would probably have put in the same quantity as the druggist did. The jury examined the prescription and were unanimously of opinion that the item looked far more like 61 than 6. They returned the verdict mentioned above and entirely exonerated the druggist. They added a rider that they thought that prescriptions should be sent out with a definite statement upon them as to whether they were for a child or an adult.

Coventry and Warwickshire Hospital.

The annual meeting of the friends of this institution has recently been held under the presidency of Mr. F. A. Newdigate Newdegate, M.P. The general committee's report for the year showed that 843 in-patients had been treated as against 732 in the previous year, whilst the out-patients attended had been 6677 as against 5268 in the previous year and 1043 as compared with 780 in the special department. The average cost of inmates had been £5 9*s.* 10½*d.*, a decrease of 4*s.* 11*d.* on the average cost of 1902. The ordinary income for the year was £4229, a decrease of £8. The ladies' auxiliary contributions amounted to £218. The extraordinary income for the year had been £4217, a very considerable increase owing to the generous gift of £1000 by Mr. J. Feeney and £3617 the proceeds of a bazaar. The ordinary expenditure had been £4919 and the extraordinary expenditure £666. The Working Men's Hospital Saturday Committee had again beaten its record by raising £1725. The accounts for the year closed with a balance due to the treasurer of £615. The committee appealed for increased public support and intimated that in view of the growing needs of the city it was proposed to appeal to the public for support to an extension fund. The chairman stated that it was evident that the hospital ought to be enlarged and he hoped a response would be made to the appeal issued by the committee. He was told that 24 people were waiting for admission to the hospital. They had to face the fact that Coventry was becoming the centre of a large manufacturing district and the presence of new factories in the district made it more incumbent upon them to support necessary institutions like hospitals. In the course of the discussion Mr. Faulder White suggested, in regard to proposed extensions, that the committee should consider the question of building outside the city a "hospital of ease." It would be better to treat many cases in the pure air than have the present site crowded up with new buildings.

Feb. 23rd

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Dangers of Water Gas.

THE numerous deaths that have recently taken place from accidentally breathing water gas bring up the question as to the advisability of its use by gas companies merely because it is cheap and can be produced rapidly. The figures are not at hand but statements have been made from time to time that since its very general use for mixing with coal gas accidental poisoning has become more frequent than when coal gas was supplied without admixture. But, as an inquest held at Sheffield on Feb. 17th shows, this is not the only source of danger. A man was found dead in his house. There was nothing in the house to account for it, but close by was a Siemens blast furnace which had been shut down since September until three or four days before the tragedy occurred. Several witnesses told how they visited the house on the Saturday and Sunday, and after being there a few minutes were attacked by headache, dizziness, and vomiting. The post-mortem examination by Dr. Godfrey Carter and the analysis of the blood by Professor Macdonald showed clearly that death was due to poisoning by carbon monoxide. In reply to the coroner, Professor Macdonald said that carbon monoxide was an ordinary product of the Siemens steel process. One-tenth per cent. of the gas had been fatal. The cellar of the house adjoined the works and Dr. H. Scurfield, the medical officer of health, thought that the gas came from the cellar. Several other cases have been recently reported—as, e.g., the case of a nun in Liverpool the other day—showing how insidiously dangerous the gas is and, therefore, that special care should be taken against accident. Slight leakage of gas from ordinary gas fittings is a common occurrence. It is bad enough when coal gas only is used but when there is an admixture of water gas the danger to life is enormously intensified and extreme care—a most rare commodity—should be taken to insure that the fittings are gas-proof.

Provident Dispensaries.

The Manchester and Salford Provident Dispensaries Association was formed in 1874 for the double purpose of relieving the various hospitals from improper applications—protecting them, in fact, from abuse—and of affording medical attendance to the provident. The inquiries into the circumstances of the hospital out patients showed that for the first ten weeks after it began more than half of those at the infirmary were "improper applicants" and the percentage at all the associated charities for the year 1875 was 42·32. During the year 1903 the percentage at the four hospitals now associated with the provident dispensaries was 5·05. It appears therefore that the association may fairly lay claim to have done a good deal in the prevention of hospital abuse. As regards the provision of medical attendance on the provident it is not easy to make any statement that would not excite criticism. The medical profession, it is alleged, has never been unanimous about anything and in Manchester the "dispensary doctors" and their position, their wrongs, and their privileges, have afforded material for discussion and controversy for the last 30 years. Nor is the subject yet worn out. The annual report claims an increase in the number of paying members, the total membership being 18,620, while there is a gross surplus of £290, from which certain payments have to be deducted.

Infantile Mortality and the Milk-supply.

On Saturday evening, Feb. 13th, Dr. Henry Ashby addressed a meeting at the Art Museum, Ancoats, on Infantile Mortality. Having pointed out how remarkably the infantile death-rate in New York had declined since systematised attention had been paid by various philanthropic societies, agencies, and individuals to the feeding and environment of children, Dr. Ashby urged that the interests of the farmers, the milk dealers, and the citizens were the same, inasmuch as better results would be obtained if some form of fresh milk were substituted for the condensed milk, and the various forms of dried milk, with additions of malt and starch, which were now used. He urged all to support the corporation in its endeavours to improve the milk supply by insisting on a high standard of cleanliness in its treatment from the cow through its various stages till it reaches the infant and by stopping the supply of impure milk or that from diseased cows.

Infirmary for Leigh.

It has been decided that Leigh, which is now a town of between 8000 and 9000 inhabitants, shall have its own infirmary. The scheme, which is capable of extension, will provide at first for 30 patients, 15 men and the rest women and children. The total estimated cost is £15,000. Lord Lilford has given a site in a central situation.

Death of Mr. Robert Smith, M.B., C.M. Aberd., D.P.H.

I regret to record the death of Dr. Robert Smith of Rawtenstall, in the Rossendale Valley, where he had an extensive practice. Several weeks ago he suffered from ptomaine poisoning after eating some tinned tongue. This was followed by septic pneumonia, from which he never rallied. His death occurred on Feb. 20th.

Feb. 23rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Prevention of Infectious Disease in Bath.

MEDICAL officers of health have to contend with many difficulties in the administration of the Public Health Acts, more especially in connexion with those sections which deal with the prevention of infectious disease. It is to be regretted, therefore, that they do not always receive from their colleagues that support which they are entitled to expect. The Bath newspapers have recently contained accounts of disputes which have arisen in the sanitary committee of the corporation between a medical member of the council and the medical officer of health, Dr. W. H. Symons, from which it appears that, among other leaflets issued by Dr. Symons, there is one having reference to the prevention of the spread of whooping-cough in which there is given a *résumé* of Section 126 of the Public Health Act, 1875, which imposes a penalty of £5 upon any person who exposes himself if infected, or permits any infected person of whom he is in charge to be exposed, in a public place or in a public conveyance. The councillor in question expressed the opinion that Section 126 only applied to those diseases which were scheduled in the Infectious Disease (Notification) Acts and said it was misleading to state that a fine could be inflicted for allowing a child with whooping-cough to go out in the public streets. The same gentleman also cast some doubt upon the desirability of examining bacteriologically specimens taken from the throats of suspected diphtheria patients because there were so many bacilli very much alike that they might discover an alarming amount of diphtheria. The reputation of the city of Bath as a health resort would surely be better served if such discussions as these took place in a committee at which reporters were not present.

Bristol Public Baths.

At a meeting of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health held at Bristol on Feb. 18th Dr. D. S. Davies gave an account of the public baths which had been established in Bristol and the members of the society subsequently visited the most recently erected bathing establishment at Barton Hill which has some features of a novel description. The corporation of Bristol has acquired by purchase three public baths and has erected four others. Swimming baths either open or covered are connected with each of these seven establishments; there are slipper baths in six and in two there are washhouses. The question of erecting three more open swimming baths in the public parks is now under consideration. If these are provided Bristol will compare very favourably with other towns, even with Liverpool where the accommodation for public bathing is very considerable. The total capital expenditure upon the seven Bristol baths has been nearly £70,000 and in the financial year 1902-03 there were spent in current charges £3300 more than the receipts, a sum equal to about one halfpenny in the pound on the rateable value of the city. During the same period there were 267,000 bathers. The most recently erected baths cost £17 600 and are situated in a densely populated working-class neighbourhood. In the large covered swimming bath the water is heated by the injection of steam; it is kept constantly circulating and

while traversing the pipes outside the bath it passes through a mechanical filter of pumice stone. By means of suitable inlets it is also possible to aerate the bath water. But the distinguishing feature of these baths is the installation of spray baths which have been devised by the superintendent, Mr. James Kane. These are for washing purposes and are intended to take the place of the ordinary slipper baths. Each spray bath is in a separate cubicle about half the size of an ordinary bathroom and contains in addition to a lavatory basin suitable apparatus for spraying the body. The floor is impervious and slopes to a trapped outlet. Each cubicle is provided with a dressing room from which it is divided by a gangway. This enables Mr. Kane to put into practice his contention that the room in which a bath is taken should be of a higher temperature than the room in which the bather dresses. At the Bristol baths the bath room is heated to a temperature of 115° F. and the dressing room to 65°. In addition to the advantages claimed for a spray bath over a slipper bath, it is said that not only is the initial cost of the spray bath less but there is only one-third of the quantity of water used. The establishment of these baths in a poor neighbourhood is important and the extent to which they are used will be watched with considerable interest.

Royal Devon and Exeter Hospital.

The 167th report of this institution, which has just been issued, states that 1317 in-patients were treated during 1903, against 1349 in 1902. The out-patients numbered 4970, compared with 5214 in the previous year. The average daily number of in-patients was 150. The financial statement shows that the receipts amounted to £7446 and the expenditure to £9122. The committee urgently appeals for increased support, adding that an additional £2000 per annum are needed to carry out the work of the hospital and unless this is forthcoming some of the invested funds of the institution will have to be sold to meet the deficiency. During the year Lieutenant-Colonel Miller presented a handsome marble bust of the late Dr. Patrick Miller who was an honorary physician for nearly 50 years and Mrs. Bankart presented a large photograph of the late Mr. J. Bankart, a former member of the honorary surgical staff.

University College, Bristol.

A deputation of representatives of university colleges, including University College, Bristol, waited on the Chancellor of the Exchequer on Feb. 17th on the subject of the Government grant. The Chancellor intimated in his reply that he was prepared to double the grant for the present year, so that the Bristol College will receive £2400 instead of £1200.

Feb. 23rd

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Medical Society of Edinburgh.

A MEETING of this society was held on Feb. 19th, Dr. D. C. L. Fitzwilliams being in the chair. Dr. Fitzwilliams referred to the great loss sustained by the society and by the Edinburgh Medical School by the recent death of Dr. Robert Milne Murray, an old member of the society. Dr. H. N. Fletcher showed a male patient, aged 57 years, suffering from Nervous Symptoms There had been gradual atrophy of the intrinsic muscles of the right hand and other evidence of progressive muscular atrophy. In addition the patient had lately developed some ataxia, with well-marked Argyll-Robertson pupil, diminution of knee-jerks, and increased sensitiveness to cold, symptoms pointing to locomotor ataxia. The question of diagnosis elicited considerable discussion. Dr. H J Dunbar read notes of four cases of Intussusception recently successfully treated by operation at the Edinburgh Sick Children's Hospital. The children, whose ages varied from six weeks to 11 months, were all boys and all well nourished, healthy children. In two of the cases the invagination had begun, not at the ileo-cæcal valve, but in a small pouch in the wall of the cæcum. Dr. Dunbar attributed the success of the operation in these cases very largely to the comparatively short time which had elapsed between the onset of the condition and the operation. The operation itself was one which every practitioner should be prepared to perform. A dissertation on Anæsthesia in Difficult Cases, by Dr. Sidney Gilford, was read in his absence by Dr. H. D. Shepherd. Dr. Gilford contended that chloroform was the safer general anæsthetic at the extremes of life and in all operations on the head, thorax, and abdomen, and also in all cases of lung disease. In other cases ether should as a rule be employed. Deaths under chloroform occurred most frequently in the prime of life, at which time local anæsthesia could be most safely used; and in very many of the recorded cases local anæsthesia could have been perfectly well employed. Dr. Gilford stigmatsied as absolutely criminal the practice occasionally followed, especially in dental operations, of giving chloroform with the patient in the sitting posture.

The Case of Dr. Lachlan Grant.

At a recent meeting of the Ballachulish Workmen's Medical Society, which was held in the Public Hall, Ballachulish, presided over by Mr. Donald Macmillan, it was unanimously agreed that all legal expenses incurred by Dr. Grant and by the medical club during the recent dispute should be paid out of the appeal fund. The fund received upwards of £900 from the public.

Glasgow Southern Medical Society.

Sir J. Halliday Croom on Thursday, Feb. 11th, delivered an interesting address before this society, of which he is Vice-President, taking for his subject "Moot Points in Cancer." The lecturer was inclined to attach little importance to the influence of heredity in malignant disease.

Feb. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Ultra-microscopic Disease Germs.

Professor E. J. McWeeney, M.D., delivered an interesting lecture on Feb 17th in the theatre of the Royal Dublin Society on Ultra-microscopical Disease Germs. After showing on the optical screen projections of many well-known parasites he dealt with the minute bacteria which cause disease through their parasitic mode of life. He showed the large bacteria in anthrax and the smaller kinds down to the germ of influenza which is, of course, one of the smallest known. He then dealt with the special subject of his lecture and stated that the limit of microscopical visibility was set by the wave-length in white light at 1/43500th of an inch. Particles less than half a wave-length in size could only be seen as small blurred spots called "diffraction discs," neither their shape nor their structure being discernible. There had been accumulating evidence to show that certain infectious maladies, the course of which had hitherto baffled the bacteriologist, were really caused by germs too small to be seen by our best microscopes and yet perfectly recognisable by their effects. One of these was the germ of pleuro-pneumonia in cattle, a veritable scourge until about ten years ago when it was stamped out owing to the labours and discoveries of the late Professor Nocard, the very eminent French veterinarian whose latest researches were carried out in Ireland under the auspices of the Agricultural Department. The lecturer explained the methods by which Professor Nocard made his discoveries without any microscopical aid and concluded by mentioning many diseases the pathology of which is really in the domain of the ultra-visible rays. As regards hydrophobia it is well known that the illustrious Pasteur failed to see its germ but, acting in the belief that it must be existent and fatal, saved thousands of lives.

Shell-fish in Ireland.

Dr. T. J. Browne, medical inspector under the Local Government Board, states that periwinkles are collected all round the coast of Ireland to the measure of about 1500 tons per year and are exported to the London, Liverpool, and Manchester markets. For some strange reason they are not consumed in Ireland as food. The inspector states that they are not collected in the vicinity of sewer outfalls or in situations liable to pollution. They are boiled before being eaten but Dr. Browne seems doubtful whether they are sufficiently cooked to be safe from pathogenic organisms. He is unable to say whether they are completely sterilised but is of opinion that if they are not properly cooked their consumption might be attended with a certain amount of risk.

Epidemic of Blood-poisoning in Cootehill Workhouse.

Dr. E. Coey Bigger, medical inspector under the Local

Government Board, has reported in reference to the recent outbreak of septicæmia in the infirmary of Cootehill Workhouse which caused the death of four patients that he found as a result of his investigation that the patients were in charge of two qualified nurses who were present and assisted at the operations. The medical officer sterilised his instruments and dressings and the operations were carried out with the necessary antiseptic precautions. The wards were disinfected biennially. No sanitary arrangements were provided inside the building and drainage and slops were carried off in an open channel situated several feet from the walls. The wards had not sufficient window space and so did not receive sufficient sunlight. A direct and definite cause for the outbreak was difficult to assign but Dr. Bigger reports that the two main wards occupied by patients were re-floored some years ago and that the boards, which were not closely joined, were laid on the top of the old floor, which might have contained disease germs. The medical officer was inclined to attribute the outbreak to this circumstance. It has been advised by the Local Government Board that the fever hospital should be enlarged and that better accommodation should be provided for all infirmary patients.

Queen's College, Belfast, and the Ulster Medical Society.

The Ulster Medical Society at a recent general meeting unanimously passed an important resolution having reference to Queen's College, Belfast. The resolution recorded the necessity for the provision of increased facilities for higher scientific teaching in Queen's College, pointing out that the faculty of medicine had always formed one of the most important departments of the College and must ever remain in the closest touch with the progress of investigation and research in the various physical and biological sciences. The resolution also, while recognising and appreciating the manner in which Queen's College had utilised the resources at its disposal in keeping abreast of modern methods of teaching medical science, pointed out that the training of medical students in the subjects of zoology, botany, chemistry, and physics is certain to suffer unless more adequate facilities for teaching these subjects are now provided and drew attention to the necessity for providing the College with the means of taking full advantage of the generous offer of the Right Hon. W. J. Pirrie to build a laboratory for physical science at his own expense. It is undoubted that the absence of sufficient laboratory accommodation and staff seriously interferes with the development of post-graduate work in medical science at Queen's College and it is to be hoped the Lord Lieutenant, the Chief Secretary, Lord Londonderry, and the various Members of Parliament to whom copies of the motion have been sent, will take an active interest in the plight of the College.

Feb. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Diagnosis of Actinomycosis.

AT the meeting of the Academy of Medicine held on Feb. 9th M. Le Dentu referred to the difficulties in the diagnosis of actinomycosis and to the necessity which existed for a histological examination. He himself had just had under his own care a very interesting and deceptive case—namely, that of an old man, aged 75 years, who was suffering from a tumour. The look of the growth and the multiple fistulæ in it led the medical men of Lyons to think that the case was one of actinomycosis. Examination of the pus, however, revealed none of the typical granules, neither did curetting the bone. Histological examination showed the growth to be a typical epithelioma. M. Cornil referred to the possible absence of the characteristic granules. In one case under his care these granules which could not be found at the first examination were afterwards discovered in large quantities in the spongy nodules from the bone. This, however, is by no means always so even in marked cases of actinomycosis. The ray masses, easily stained by violet, are as characteristic as the granules for purposes of diagnosis. On the whole, however, the opinion was expressed that it is impossible to make a diagnosis in actinomycosis without a histological examination.

The Causes of Congenital Dislocation of the Hip-joint.

Congenital dislocation of the hip-joint, a fairly common condition and one the explanation of which has often puzzled the medical profession, formed the subject of another communication at the same sitting of the Academy of Medicine. M. Le Damany, professor at the Rennes School of Medicine, brought forward a theory based upon anthropological considerations. On the one hand, the upright position by bringing about a twisting of the femur and, on the other hand, the large size of the head due to the development of the brain with its concomitant development of the pelvis would be the predisposing causes of this dislocation which is altogether proper to the human species. Owing to the obliquity of the walls of the pelvis the head of the femur, being pushed forward by the twisting of the bone, has a tendency to slip out of the acetabular cavity. As a matter of fact, in those persons who are the subjects of this lesion, either at the time of birth or in whom it develops at a very early age, the observer may note an exaggeration of the normal twist of the femur and an excessive obliquity of the base of the acetabular cavity.

Inspection of the Paris Hospitals.

The authorities of the Assistance Publique have been reckoning up the wastage which occurs in the hospitals of Paris and M. Mesureur has sent to all the hospital directors a circular announcing that he has inaugurated a system of inspection for looking into the expenses of these establishments. Each of the inspectors, who are nine in number, will spend ten days in one of the hospitals to which they will be allotted by the director of the Assistance Publique. At the end of this time they will send in a report upon the working of the hospital, mentioning any particular points which may have struck them. They will, of course, take particular notice of financial extravagances as well as of errors of administration.

Presentation to Professor Bouchard.

On Feb. 21st the ceremony took place at the Academy of Medicine of the presentation of a medal to Professor Bouchard which had been subscribed for by his pupils and friends. Speeches were delivered by, amongst others, Professor Debove, dean of the Faculty of Medicine, M. Liard, the vice rector of the Academy of Paris, and the Minister of Public Instruction who presided. The last named in the course of his speech reminded his audience of the tact and prudence, the farsightedness and goodwill which Professor Bouchard had displayed throughout his career, particularly as regarded the inspections in the faculties of medicine with which he had been charged. Knowing well how to recognise intuitively and to encourage good intentions and how to give timely counsel in such a form that it would be well received Professor Bouchard had been a brilliant representative of French science in foreign countries at various congresses. Only last year he had presided over a congress at Cairo where he had gained the respect and sympathy of all. His luminous and sound opinion together with his accurate and precise speeches had many a time been the determining factor in a decision. The Minister concluded by joining his congratulations to those of the pupils and friends of the master. Professor Bouchard, who laboured under obvious emotion, spoke a few words which were almost inaudible owing to the cheering.

Feb. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Administration of the Holy Communion.

IN the present age even those rites of the Church which the devout regard as being above question or criticism are liable to be scrutinised from the hygienic point of view. The communion cup, for instance, has been looked upon as endangering the bodily health of communicants owing to the risk of disease being conveyed by it and some reformers have therefore proposed to replace the general communion cup by cups belonging to each individual communicant. The subject has been discussed at the last General Synod of the Protestant Church of Prussia but the matter was adjourned. The daily papers now state that the vestry of St. Nicolas in Berlin, after hearing an address by the archdeacon, has decided to provide 40 communion cups to be used in taking the sacrament and also to permit any communicant to bring his own cup with him. For those who object to this innovation a cup in common will be provided as hitherto, so that

the wishes of all parties, whether belonging to the new school or the old, may be met.

Medical Questions before the Berlin Town Council.

Medical questions were a prominent feature at the recent meetings of the Berlin town council. One of them had reference to the accommodation for venereal patients in the hospitals. This is far from being satisfactory and the attention of the municipal authorities has been drawn to the matter by some unfortunate occurrences which have been recently reported in the daily press. Some years ago there was only one special department for venereal patients—namely, in the Royal Charité Hospital. The female patients were almost exclusively registered prostitutes admitted by order of the police medical officer. In consequence of the increasing number of prostitutes the available beds in course of time were found to be too few and so in 1890 the municipal authorities enlarged the accommodation by establishing a venereal department in connexion with the Municipal Asylum for the Poor. This department, which at first had 60 beds and at present has 200 beds and is under the charge of Professor Behrend, is now insufficient for the patients seeking admission. Some of the female patients complained of their enforced association with the prostitutes sent in by the police and in consequence of this want of classification many women when suffering from venereal diseases preferred to be treated at home rather than to enter the venereal department of the asylum or the Charité Hospital, the result being the extension of such diseases in families. The municipal authorities therefore intend to establish a special hospital for prostitutes exclusively and to abolish the venereal department of the asylum. For male patients and for females who are not prostitutes a special department will be provided in the new Rudolf Virchow Hospital, the largest and most lavishly equipped hospital in Berlin, which is to be opened within two years. At the last meeting of the council, when the municipal authorities were sharply attacked because they had allowed matters to become so unsatisfactory, it was decided that in the meantime a department for syphilitic patients should be provided in one of the existing municipal hospitals by erecting temporary pavilions. Other subjects of discussion concerned the enlargement of the Kaiserin Friedrich Hospital for Children, where the number of beds, especially for children with contagious diseases, has proved to be insufficient. Some of the members were of opinion that the establishment of several small hospitals for children in various districts of the city would be preferable but as this scheme would require several years for carrying it out the council decided to enlarge the existing hospital. A third matter of importance was the establishment of a training school for nurses exclusively for the municipal hospitals. Hitherto the nurses of these hospitals have belonged to certain corporations—some of them religious and some of them secular—which were under a contract to provide a sufficient number of nurses, the municipality paying a certain sum to the corporation. Henceforth the municipal council will have its own nurses trained free of charge for one year in the municipal training school, the condition being made that the probationers shall serve three years as nurses in the municipal hospitals. The nurses will be paid from 360 to 540 marks (from £18 to £27) per annum and the matrons will have salaries varying from 1200 to 1800 marks; they will also have free board, residence, and wearing apparel. They will be entitled to pensions in the event of incapacity from age or ill health. A great number of candidates have already applied for admission to the training school which is to be in connexion with the Moabit Hospital.

Professor Koch.

It is rumoured that Professor Koch intends to resign his appointment as chief of the Royal Institution for Infectious Disease and to settle in South Africa. This conjecture no doubt originated in connexion with the repeated and prolonged visits which he has made to Cape Colony and the other British colonies in Africa on the invitation of the Colonial Governments. I learn, however, from a trustworthy source that the rumour in question is unfounded, that Professor Koch has gone to South Africa by special permission of the Emperor, and that his place at the above institution will be preserved for him till his return. It is true that Professor Koch has no objection to be absent from Berlin, his relations with the medical faculty there not being very cordial for reasons which are of a personal rather than of a professional character and are not of recent date. If he contemplates retirement it is certain that nothing will be decided till his return, which is announced for the end of April.

Appointments.

Two new appointments of ordinary professors in the Berlin medical faculty are announced. The chair of the late Professor Jolly will be taken by Professor Ziehen of Halle, whilst Professor Gusserow, who is retiring from the chair of Gynæcology on the ground of his advanced age, will be succeeded by Professor Bumm, also of Halle.

Feb. 22nd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Changes in the Ontario Board of Health.

Dr. Peter H. Bryce, who for many years has been secretary of the Ontario Board of Health and deputy registrar-general, has entered the service of the Dominion Government at Ottawa, his new office being that of immigration inspector, supervising all the immigration officers at the ports of entry. In addition to this he is to have charge of the sanitary arrangements in connexion with the Indians who are the wards of the Federal Government. Dr. Bryce has been succeeded by Dr. Charles A. Hodgetts who has been connected with the board of health for a number of years, having three years ago been appointed permanently to the position of medical inspector of the province of Ontario.

Vital Statistics of Ontario.

The annual report of the Registrar-General for the province of Ontario is now being prepared for 1902. During that year there were 47,796 births registered, compared with 46,061 in the previous year, an increase of 1735, giving a general birth-rate of 21·7 per 1000. The birth rate in the cities is 22·2 per 1000, or 0·5 higher than the general average. Compared with the 1 per cent. increase in population the increase in births is fairly satisfactory. Comparison with the province of Quebec, so long regarded as the possessor of a high birth-rate, shows there is a tendency to a decrease in that province, the births falling there from 60,345 in 1898 to 55,398 in 1901, while the deaths increased 348 in the same period. The marriages in Ontario in 1902 numbered 18,072, compared with 18,035 in 1901, an increase of 37. The total number of deaths was 27,864, compared with 29,608 in 1901, giving a death-rate of 12·6 per 1000 compared with 13·6 per 1000 in 1901. The high average of health in Ontario is shown by comparison with other countries, the corresponding rate being 17·1 in the United Kingdom, 14·9 in Norway, 24·2 in Austria, 18·0 in Switzerland, 20·0 in the German Empire, 20·1 in France, and 27·6 in Spain. The deaths from typhoid fever and from tuberculosis show a continued decrease.

Prevention of Tuberculosis.

The British Columbia Association for the Prevention and Treatment of Consumption and other Forms of Tuberculosis was organised at a meeting held in the City Hall, Victoria, British Columbia, on Jan. 20th. The medical aspects of the question were put before the meeting by Dr. C. J. Fagan, the secretary of the Provincial Board of Health, who thought that the Dominion Government should assist more in the way of prevention of the disease, seeing that Canada spends annually some $500,000 to assist 60,000 emigrants to settle here. Sir Henry Joly, the Lieutenant Governor of the province, was elected honorary president; Dr. Proctor of Kamloops, secretary; Dr. Fagan, treasurer; and Mr. R. E. Walker and Dr. J. C. Davie members of the executive committee.

Royal Victoria Hospital, Montreal.

The annual meeting of the board of governors of the Royal Victoria Hospital, Montreal, was held in that city in the latter part of January, the medical report being as follows. On Jan. 1st, 1903, there were 188 patients remaining over from 1902. During the year 2911 were discharged, of whom 1397 were well, 914 improved, 165 not improved, 293 not treated, and 142 died. Of the 142 deaths 38 took place within 48 hours of admission. The death-rate for the year has been 4·88 per cent., or if those dying within 48 hours of their admission be deducted 3·57 per cent. The highest number of patients in the hospital on any one day was 230 on Dec. 17th and the lowest was 166 on August 30th. In the

out-patient department the total number of patients treated was 4398. The income for the year amounted to $140,368, while the ordinary expenditure amounted to $120 419. The number of patients admitted during the year numbered 2931.

National Sanatorium Association: Sixth Annual Report.

The sixth annual report of the physician in charge of the Muskoka Cottage Sanatorium shows that the past official year ending Sept. 30th, 1903, has been one of progress. The greatest number of patients in residence at any one time during previous years has been 61; last year they reached 69. The number of patients in the sanatorium on Oct. 1st, 1902, was 49—namely, 26 males and 23 females. The number admitted during the year was 164—namely, 99 males and 65 females. Of 115 patients whose cases were reported on 24 were discharged apparently cured and 41 with disease arrested.

Death of Dr. John Herbert Sangster.

A notable figure in the medical life of the province of Ontario passed away in the person of Dr. John Herbert Sangster of Port Perry, Ontario, who died suddenly from heart disease while on a visit to Toronto. He was 72 years of age and was born in London, England. From 1866 until 1871 he was a prominent authority on education in Ontario, being at that time principal of the Toronto Normal School, at the same time acting as professor of chemistry and botany at what was then Dr. Rolph's medical school which subsequently became the Medical Faculty of Victoria, now defunct. It was at that time that he took up the study of medicine and upon his retirement from the Normal School he removed to Chicago, but returning within a short time to Canada he began the active practice of his profession at Port Perry, where he continued up to the time of his death. He was a prominent and valued member of the Ontario Medical Council, to which body he was elected in 1894. Here, upon taking his seat, he began a campaign against the presence on that body of representatives from defunct medical colleges. Many years ago Sangster's Arithmetic was the standard text-book in the public schools.

Western General Hospital, Montreal.

The annual meeting of the supporters of the Western General Hospital, Montreal, was held in January when it was reported that the number of patients in the institution was larger than ever before. The medical report was submitted by Dr. F. R England. It is stated that the number of patients admitted to the hospital during 1903 was 600. The death-rate was 5·16 per cent., but deducting the deaths which occurred within 48 hours of their admission and which numbered 13 the rate dropped to 3 per cent. The average number of days' treatment in the hospital was 18·3. In the outdoor department the number treated amounted to 7560, or an increase of 990 over the previous year.

Protestant Hospital for the Insane, Quebec.

The annual meeting of the supporters of the Protestant Hospital for the Insane of Quebec, situated at Verdun, was held at Montreal in February. A question which caused a good deal of discussion was that of voluntary commitment, the superintendent, Dr. T. W. Burgess explaining that he had been solicited by people who believed they would be mentally benefited by treatment in the institution for admission. Owing to the law which forbids this form of commitment he was, of course, obliged to refuse their requests. The total admissions for the year numbered 152 and the number under treatment 581; 57 were discharged as recovered and 23 as improved. The deaths numbered 44.

Canadian Medical Association.

The thirty-seventh annual meeting of the Canadian Medical Association will meet this year at the extreme western end of Canada, at Vancouver, British Columbia, under the presidency of Dr. Simon J. Tunstall of that city. Mr. Mayo Robson will be a guest of the association.

Toronto, Feb. 17th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Asylums for the Insane in New York State.

THE eleventh annual report of the New York State Charities Aid Association to the State Commission in Lunacy has just been published. The report states that for the year 1903 the total number of insane persons in State hospitals and licensed asylums was 25,934, an increase of 941 over the previous year. Of this total number, 24,187 patients were in the 14 State hospitals, being 918 more than on Oct. 1st, 1902. This increase is much larger than has been customary. One of the most important measures noticed in the report was the Bill introduced in the New York State Legislature of 1903 to provide for the establishment of a reception hospital for the insane through the joint action of the State and the city of New York. This Bill authorised the city to acquire a suitable site and to lease it to the State at a nominal consideration and authorised the State to spend $300,000 (£60,000) in erecting buildings to receive "a limited number of alleged insane and insane patients for the purpose of affording them such speedy and skilled treatment as might be conducive to their more prompt recovery." The annual per capita rate of maintenance for inmates of the public asylums for the insane in New York State showed an increase of nearly $11 (£2 4s) over the rate of the previous year. All the State hospitals of New York are greatly overcrowded and it is recommended in the report that steps should be taken quickly to provide for the accommodation of the rapidly increasing insane population of New York State.

Bellevue Hospital Nurses' Home.

The Bellevue Training School for Nurses, the first of its kind started in the United States, has issued an appeal for aid. Nearly 30 years ago the Bellevue Training School practically came into existence, since which time the work performed by those trained there has been of an exceptional nature. The city of New York pays to the Bellevue Training School a certain sum for the services and maintenance of each nurse supplied, but this sum is not enough to cover the entire cost of educating and caring for these women. The crowded condition of the wards of Bellevue Hospital makes it necessary now for each nurse to care, on an average, for 7·5 patients, while the average of nurses to patients in the best hospitals in the United States not run by cities is 4·9. The city of New York now requires more nurses. To answer this call adequately more room is needed for the Nurses' Home. The present home is filled to its utmost capacity and additional premises must be at once rented and properly equipped. The limit of the private income of the home has been reached and as new arrangements must be made at once the sum of $25,000 (£5000) is asked for to make it possible to embark upon this work. This is the first public appeal made by the Bellevue Training School for Nurses in over a quarter of a century.

Feb. 15th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Preservatives in Food.

AT the central court, Sydney, an employé of the Concentrated Milk Company was prosecuted for "disposing of a certain article of food—to wit, concentrated milk—containing boric acid, an antiseptic mentioned in the Public Health Regulations, in a proportion exceeding $\frac{1}{10}$th of a grain per pint of the said food." The Government analyst notified that the milk in question contained 14 grains per pint of boric acid, an amount that would be dangerous to health. The case was adjourned.

Duties of Health Officers.

Codes of duties for officers of health under the Health Acts have been issued by the Board of Health of Victoria as follows:—

An officer of health is required to carry out the directions of the board or municipal council and to inform himself respecting all influences injurious to health in the municipal district for which he is appointed. On becoming aware that any person in the district is affected with small-pox, Asiatic cholera, plague, yellow fever, typhus fever or leprosy, or that any article is likely to convey the infection of any such diseases he must immediately report the matter to the board and the municipal clerk. Should the information refer to a district other than that for which he is appointed the obligation to report still holds good. The officer is obliged to investigate any disease of a dangerous nature not included in the above list, also as to any condition injurious to health and to advise as to the closing of schools and superintend the work of inspectors. Another of his duties is to systematically inspect premises used for the production, preparation, storage, or sale of articles of food. In case any article appears to be unfit for human consumption he is to give such directions as may be necessary to have it dealt with according to statute. The officer is obliged to direct inspectors to procure samples of drugs for analysis and must inquire into all offensive processes of trade and maintain careful supervision over water works, drainage, and sewerage. Duties

performed by the officers are to be recorded and embodied in an annual report to the council and the board.

Consumptives' Home, South Australia.

The Governor of South Australia has opened the "Gooch" wing recently added to the Kalyra Home for Consumptives at Belair, South Australia. The home is pleasantly situated at the top of the first range of the Mount Lofty Hills. The new wing has been erected chiefly by the efforts of Mr. C. H. Gooch, after whom it is named.

Dismissal of a Hospital Surgeon.

The surgeon to the Jamee Hospital, New South Wales, has, according to the *Cootamundra Herald*, been dismissed by the committee in somewhat peculiar circumstances. A maid-servant in his employ was admitted to the hospital and there confined; a few hours afterwards she was removed to the surgeon's private house. She then left his house and went by train to Albury and was admitted to the Albury Hospital in a state of collapse. It is stated that the surgeon in question knew nothing of her condition till after her confinement and had her taken back to his house in the interests of her family to avoid publicity and that "not the slightest suspicion of impropriety rests on" him.

Dental Board, New South Wales.

The first election of members of the Dental Board under the Dentists Act of New South Wales resulted in the return of Sir James Graham, M.D., and Dr. Palmer as medical members.

Balmain Friendly Societies' Dispensary.

The trouble between the Australian Natives' Association and the medical officers to the Balmain Dispensary has resulted in a proposal by the members of the dispensary board to appoint three medical officers, one at £600 and two at £500 per annum, to give their whole time to the members of the dispensary and of the affiliated lodges. The question is whether they will be able to get the medical officers who would be ostracised by their professional brethren.

Brunswick Friendly Societies' Dispensary.

At Brunswick, Victoria, the lodges formed a medical institute and have with great difficulty secured two medical officers. How long they will be able to carry on is doubtful as they are not recognised by the rest of the profession.

Sydney Medical Mission.

The third annual meeting of the supporters of the Sydney Medical Mission was held recently, Lady Rawson presiding. The report showed that the medical superintendent had made 2195 visits to the homes of 495 patients; 2644 patients had made 10,309 attendances at the dispensary. The mission reaches a class unable to attend the hospitals during the day time as they either have to be at work or are women who cannot leave their homes. All the patients were extremely poor. At the meeting the speakers all expressed surprise at the amount of work done and the smallness of the expenditure, and extolled the great self-sacrifice of the medical superintendent, Dr Carlile Thomas, who has been now succeeded by Dr. Stillwell.

Acute Suffocative Pulmonary Œdema.

In the *Intercolonial Medical Journal* for December Mr. H. M. Hewlett describes four cases of a very rare condition—acute suffocative pulmonary œdema—concerning which very little information can be found. The cases are most carefully recorded, with details of the chemical examination of the expectorated fluid and of the blood pressure, and in one fatal case of the post-mortem examination. All the cases occurred in women at or past the prime of life; all showed evidence of chronic cardio vascular and renal disease with very great arterial systolic blood pressure, produced probably by excessive consumption of alcohol. The majority of the attacks occurred at night after some extra exertion. They came on with remarkable suddenness and subsided rapidly when improvement began. The expectoration began immediately and, in Mr Hewlett's opinion, the mechanical obstruction which it causes to the air entry is responsible for the dyspnœa, cyanosis, and laboured heart action. Professor Martin has suggested that the escape of the highly albuminous fluid is due to an altered permeability of the capillaries and alveolar cells; it cannot be a question of increased pressure, for no ordinary pressure would drive almost pure serum through living animal membranes in their normal condition. The treatment which Mr. Hewlett has found effective is the hypodermic injection of a quarter of a grain of morphine

Jan. 12th.

Obituary.

JAMES SMITH TURNER, M.R.C.S. ENG., L.D.S.

ON Feb. 22nd, after a long illness, Mr. James Smith Turner passed away at his residence in Ealing. He was for many years one of the most notable members of the dental profession and to him perhaps more than to any other man dentistry owes the position which it holds at the present day. He was one of the pioneers of dental reform and with the late Sir John Tomes was primarily responsible for the passing of the Dentists Act in 1878. Born in Edinburgh in 1832 James Smith Turner was at the age of 14 years apprenticed as a mechanic to a dentist in that city. In 1853 he came to London without money or influence and in a short space of time was destined to see two important events occur—the passing of the Medical Act of 1858 which gave to the Royal College of Surgeons powers to grant licences in dental surgery, and the establishment of the Dental Hospital. He joined the Middlesex and the Dental Hospitals, and in May, 1863, became M.R.C.S. and in the following August L.D.S., supporting himself all the time by mechanical work and a growing dental practice. It was during his career at the Middlesex Hospital that he became associated with Mr. (subsequently Sir) John Tomes, and those two ardent reformers with several colleagues set to work to convert what was then the trade of a dentist into an honourable profession. In 1872 he went to the United States to study the conditions of dentistry in that country and on his return the campaign for dental reform was started in true earnestness. The movement met with hostility in some medical quarters but in spite of this a Bill was drawn up and thanks to the labours of Lord Avebury (then Sir John Lubbock) the Act was passed in one session. In the lobby of the House Mr. Smith Turner was indefatigable in his attendance, being always present to answer inquiries and to remove difficulties and there is little doubt that but for his splendid self-sacrifice the Bill would not have so speedily become law. Directly the Act was passed he set to work to found the British Dental Association and was for many years president of the representative board and in 1891 presided at the annual meeting of the association in London, when he delivered a thoughtful and masterly address. In the Royal Dental Hospital he was ever deeply interested and held the position for several years of lecturer on dental mechanics and at the time of his death was one of the consulting dental surgeons and vice-chairman of the committee of management.

At the Middlesex Hospital he held the posts of dental surgeon and consulting dental surgeon. He was for years an active member of the Odontological Society of Great Britain and held office continuously from 1873 to 1884 when he was elected president. A friend closely associated with him for nearly 20 years in professional matters writes that "a very short acquaintance convinced me of his intense devotion to the highest professional interests. His professional instincts were of the highest order and everything that even had the suspicion of loose ethics received from him strenuous and untiring opposition. This integrity of purpose naturally brought him into conflict with those in his profession who had hardly risen from the trade position from which dentistry had only just emerged and consequently his motives were often not understood or appreciated." Mr. Smith Turner was a man of strong individuality, energy, and application. He was an excellent speaker and well able to hold his own in any discussion, and though a born fighter he never carried his hostility into private life. A true and loyal friend, an honourable and upright man, all his innate instincts were professional and he was always ready to sacrifice time and pleasure to the good of the profession which he loved so well. Ill though he was he followed with the closest attention the agitation about university degrees in dentistry and some of his last words sent to one of his closest friends who disagreed with their establishment were "Stick to your guns!" He died early on Monday morning and on the Sunday afternoon he had listened with the closest interest to the article in THE LANCET of Feb. 20th on the Future Position of the Dental Profession. He said "things have changed" and he had lived to see the change for which he had given up professional practice and the pleasures of domestic life.

GEORGE NIVEN, M.A. ABERD., M.B. CANTAB., M.R.C.S. ENG.

THE death occurred on Feb. 7th of Dr. G. Niven of Manchester at the age of 45 years. The deceased, who originally belonged to Peterhead, had a very distinguished career as a student at Aberdeen, where he took the degree of M.A. in 1877, and at Cambridge, where he took the degrees of B.A. in 1881 and M.B. in 1886; also in the latter year he obtained the diploma of M.R.C.S. Eng. On the completion of his university studies he entered upon professional work at Didsbury, Manchester, where he not only built up a large practice but came to be known in medical circles as one of the ablest practitioners of the time. Dr. Niven married the eldest daughter of Mrs. Knox, St. Ann's, Inverugie, Peterhead, and she and three children survive him. Sincere and widespread regret will be felt at the early death of so promising a practitioner. One of the brothers of the deceased is Sir William Niven, for many years director of studies in the Royal Naval College, Greenwich; another brother is Mr. Charles Niven, professor of natural philosophy in the University of Aberdeen; while a third brother has attained a high position in the medical profession at Manchester.

CHARLES GODSON, F.R.C.S. ENG., L.S.A.

DEATH has just removed from our ranks one of the kindest hearted and most genial of general practitioners, a man whom all other medical men living within seven miles of Barnet respected and whose opinion was highly valued, not only by his own patients, but also by his fellow practitioners who called him in to assist them in the diagnosis and management of doubtful cases. Mr. Godson was 84 years of age and although he was little known to those in active practice at the present time, having retired from the profession about 20 years ago to enjoy a well-earned rest and to lead the life of a country gentleman, he was in his day highly thought of by Gull, Paget, Erichsen, Pollock, and other shining lights of bygone days.

Born in June, 1819, at Heckington, in Lincolnshire, he was apprenticed for the sum of £294 for a term of five years in 1834 to Mr. William Wade of the Westminster Dispensary, Gerrard-street, Soho, for the purpose, as stated in the words of his indenture, of being "instructed in the arts, businesses, or professions of a Surgeon, Apothecary, Accoucheur, or Man Midwife," and he was "to be allowed good and sufficient meat and drink at the table of the said William Wade." During this time he dissected and attended the lectures and practice at his own dispensary and also at St. George's Hospital. He became a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1840 and 20 years later he was elected an honorary Fellow of the Royal College of Surgeons. In 1842 he married and he also bought Mr. Morison's practice at Barnet and while there he held various appointments, among which may be mentioned that of surgeon to the 2nd Middlesex Royal Rifle Regiment of Militia, divisional surgeon to the Metropolitan Police, and surgeon to the Great Northern Railway and to the Leathersellers' Company. He was also medical officer to the Barnet union infirmary and a Fellow of the Medical Society and of the Obstetrical Society of London. His memory will always be held dear by those who knew him.

In Vol. XVIII. of the Transactions of the Obstetrical Society of London (1877) will be found "Midwifery Statistics of 35 Years' Practice, compiled by Clement Godson, M.D., from the records of his father, Charles Godson, F.R.C.S.," the result of which showed the death-rate to be as low as 1 in every 460 women confined, or seven deaths in 35 years' practice, 3223 women having been attended. The paper shows how carefully the details of each case were recorded and how satisfactory were the results.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. Charles F. France, M.R.C.S. Eng., L.R.C.P. Lond., was on Feb. 18th presented with a meerschaum pipe, a silver match-box (suitably inscribed), and tobacco by the members of the St. Thomas's ambulance class of Wigan as a token of appreciation of his services.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the first examination of the Board at the quarterly meeting of the examiners in the subjects indicated:—

Chemistry.—Joseph Henderson Bulcock, Owens College, Manchester, and Technical School, Blackburn; John Head Burdett, St. Mary's Hospital; William Burton, University of Liverpool and Technical School, Liverpool; Henry Carter, Birkbeck Institution; Henry Robert Cotton and Arthur Downes, St. Bartholomew's Hospital; Cecil Howard Douglas, Guy's Hospital; Arthur Etwin Foerster and José Leighton Houlton, M.P.S., St. George's Hospital; Charles Richard Gardner, Westminster Hospital; John Rhodes Liddell, University College, Sheffield; Arnold da Vesci Gibson and John Harry Meers, St. Mary's Hospital; Thomas Mackinlay Miller, St. Bartholomew's Hospital; Cyril Macdonald Plumptre, Guy's Hospital; Gerald Henry Pridham, St. Thomas's Hospital; Edward John Joseph Quirk, Charing Cross Hospital; Alfred Henry Valentine St. John, Guy's Hospital; Thornley Fretson Skinner, University College, Sheffield; John Startin, St. Thomas's Hospital; Frank Stuart Tamplin, St. George's Hospital; Harold Skarratt Thomas, London Hospital; and Alfred Richardson Wise, Birkbeck Institution.

Practical Pharmacy.—Cecil Crees Austen, Westminster Hospital; Arthur Reginald Beaumont, L.D.S. Eng., Laurence Henry Burner, and George Hammond Cheyney, Guy's Hospital; William Byam, St. George's Hospital; Emil Christofferson, William Thomas Clarke, and Edward James Dermott, University College, Bristol; Howard Dennis Clapham, private study; James Edward Collins, London and Guy's Hospitals; Harold George Shackleford Courtney, St. George's Hospital; Herbert Harry Emmerson, University College, Sheffield; Verner George Heseltine, St. Bartholomew's Hospital; James Aubrey Ireland, University of Liverpool; James Eaton Lascelles, St. Mary's Hospital; Walter Lister, St. George's Hospital and Yorkshire College, Leeds; Alexander Henry McCandlish and George Richard Painton, London Hospital; Herbert Alban Parker, Christopher Trehane Pellow, and Harold Sigismund Sington, St. Thomas's Hospital; James Sydney Pascoe, Charing Cross Hospital; Martin Remers, Owens College, Manchester; Walter Duckett Southern, private study; Maurice Spotswood, University of Liverpool; James Leonard Octavius Tilley, L.D.S. Eng., University College, Bristol, and Charing Cross Hospital; William Tregea and Horace Welshman Ward, Birmingham University; and William Charles Augustus Ward, St. Thomas's Hospital.

Elementary Biology.—Harold Percivall Aubrey, L.D.S. Eng., Birkbeck Institution; Herbert George Balls, Middlesex Hospital; Francis Brachi, St. George's Hospital; Ernest Frederic Westmore Buckell, University College Hospital; Henry Carter, Birkbeck Institution; Cecil Howard Douglas, Guy's Hospital; Bertie Cecil Eskell, Merchant Venturers' Technical College, Bristol; George Douglas Gordon Fergusson, St. Mary's Hospital; Arthur Edwin Foerster and José Leighton Houlton, M.P.S., St. George's Hospital; Howell Woodwell Gabe, Middlesex Hospital; Herbert Wilks Heasman, Edward Pierce Llewellyn Hughes, and Victor Patrick Hutchinson, Guy's Hospital; Arthur Toase Jackson, L.D.S. Eng., and Charles Anderson Meadon, Birkbeck Institution; George Lawson Harvey Johnston, Westminster Hospital; Henry Goff Kilner and Martyn Henry Langford, Middlesex Hospital; John Rhodes Liddell, University College, Sheffield; Reginald Arthur Morrell, St. Thomas's Hospital; Satyen Mozumder, St. Bartholomew's Hospital; Henry Rupert Mullins, Guy's Hospital; Percy Charles Raiment, London Hospital; Richard Bancroft Nevel Reade, St. Mary's Hospital; John Richards and Arthur Denys Rope, Middlesex Hospital; and Alfred Samuel, University College, Cardiff.

The following gentlemen passed the second examination of the Board at the quarterly meeting of the examiners in the subjects indicated:—

Anatomy and Physiology.—John Birch, Owens College, Manchester; Walter Follett Blandford, B.A. Camb., Cambridge University and St. George's Hospital; Walter Rowley Bristow and Gustavus William Musgrave Custance, St. Thomas's Hospital; Bevil Molesworth Collard, London Hospital; John Frederic Cutler, Guy's Hospital; Francis Carminon Doble, King's College Hospital; Herbert James Duské, St. Mary's Hospital; Leonard Edwards and Carlton Atkinson Ellis, London Hospital; John Stewart Farnfield, L.D.S. Eng., Guy's Hospital; Rupert Farrant, Westminster Hospital; John Rowland Foster, University College Hospital; Philip Julius Franklin, University of Heidelberg and King's College Hospital; Edward Slade Goss, Middlesex Hospital; Philip Henry George Gosse and Henry Martin Grey, St. Bartholomew's Hospital; William Robert Greening, Guy's Hospital; Robert Eugene Vaughan Hale, B.A. Camb., Cambridge University and St. Andrews University; Arthur William Hayward, B.A. Camb., and Carl Cornelius Hickey, Westminster Hospital; Reginald Beaumont Heygate, Middlesex Hospital; Cyril John Roby Hoffmeister, Cambridge University and Middlesex Hospital; Gerald Holroyde, Yorkshire College, Leeds; Ralph de Veil King and James Johnston Louwrens, St. Mary's Hospital, Harold Howard Leeson, St. George's Hospital; Thomas Fletcher Lumb, Middlesex Hospital; John Falconer McQueen, King's College Hospital; William Beare Martin, Owens College, Manchester; Vernon Lickford Matthews, London Hospital; Oscar Le Fevre Milburn, University College Hospital; William Alexander Owen, St. Mary's Hospital; George Downing Perry, University of Birmingham and London Hospital; George Ramsey Phillips, Stanley Arthur Piper, and John Lawson Rankine, Guy's Hospital; Horace John D'Arcy Gerrard Price and Thomas Reginald St. Johnston, Birmingham University; Felix Rawsthorne, Owens College, Manchester;

Norman Vaughan Hurry Riches, University College, Cardiff; Harold Trenchard Rossiter, Frank Oswald Spensley, and Reginald Woolsey Stocks, St. Thomas's Hospital; William Fretson Skinner, University College, Sheffield; Sidney Slade, Middlesex Hospital; Frank Harold Stephens, St. Mary's Hospital; Ernest Stratford, Cambridge University; Harold Francis Webb-Bowen, St. Bartholomew's Hospital; Nusserwanjee Hormasjee Vakeel and Maneckshaw Dhunjishaw Wadia, Grant Medical College, Bombay, and St. Bartholomew's Hospital; and Harry Warr Bennett Walling, James Adolphus von Wertern Wilke, and Reginald Willan, Guy's Hospital.

Anatomy only.—Mr. John William Heckes, Charing Cross Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws and regulations have been admitted Members of the Royal College of Surgeons and have received their diplomas:—

Philip Edward Homer Adams, B.A. Oxon., Oxford University and London Hospital; Roy Appleton, L.S.A. Lond., Yorkshire College and General Infirmary, Leeds; Edwin Launcelot Ash and Herbert Ernest Batten, St. Mary's Hospital; Lionel Danyers Bailey, St. George's Hospital; Henry Howarth Bashford and Alexander Vigors Benson, London Hospital; Walter Brinsmead Billinghurst, B.A. Oxon., Oxford University and London Hospital; Henry James Dilkes Birkett, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; Athelstan Jasper Blaxland, University College Hospital; Leonard Herbert Henry Boys, Middlesex Hospital; Harry Reginald Burpitt, University College, Cardiff, and St. Mary's Hospital; Christopher Addison Campbell, B.A., M.B. Toronto, and Colin Alexander Campbell, M.D. Toronto, and L.S.A. Lond., Trinity College, Toronto; Norman Clifton Carver, Cambridge University and St. Thomas's Hospital; James Hornidge Chauncy and Arthur Allen Foster Clarke, St. Thomas's Hospital; George Russel Haines Chell, Birmingham University; John Wheeler Cleveland, St. Bartholomew's Hospital; George Martin Clowes, London Hospital; Percival Pasley Cole, L.D.S. Eng., John Brightman Copland, and Claude Marriott Lovell Cowper, Guy's Hospital; Thomas William Walter Crawford, M.D. West. Univ., Western University, Ontario, King's College and Middlesex Hospitals; Mortimer John Cromie, Westminster Hospital; Stanley Trefusis Crump, Yorkshire College and General Infirmary, Leeds; Alan Davidson, M.D. McGill, McGill College, Montreal, and University College Hospital; George Brocklesby Davis, M.A. Camb., Cambridge University and London Hospital; John James Davis, M.D. West. Univ., Western University, Ontario, and University College Hospital; Austin Clarence Dixon, London Hospital; Thomas Lambert Draper, B.A. Camb., Cambridge University and St. Mary's Hospital; Godfrey Dru Drury, St. Bartholomew's Hospital; Armin Gascoigne Vavasour Elder, St. George's Hospital; James Warner Elliott, L.S.A. Lond., St. Mary's Hospital; Henry Herbert Elworthy, Westminster Hospital; Herbert Harry Emmerson, University College, Sheffield; Moses Feldman, London Hospital; Joseph Anthony Ferrière, University College Hospital; John Ferguson, Harry Finzel, and Arthur Frost Forster, St. Bartholomew's Hospital; Raymond Reynolds Garrett, St. Mary's Hospital; Hugh Bernard German, Guy's Hospital; Montague Frederick Grant, B.A. Camb., and Charles Frederick Hadfield, M.A. Camb., Cambridge University and St. Bartholomew's Hospital; Robert Kennerly Grogan Graves and Charles John Hope Gunning, St. George's Hospital; Harold Axel Haig, University College Hospital; Reginald Henry Hardwick, St. Thomas's Hospital; George Hastie Harper-Smith, Cambridge University and St. Bartholomew's Hospital; Dudley Raymond Harris, Middlesex Hospital; William Lawrence Hawkins, King's College Hospital; Vernon Hetherington, St. George's Hospital; Horace Bryden Hill, St. Bartholomew's Hospital; William Algernon Louis Holland, Birmingham University; William Henry Howard, Owens College and Royal Infirmary, Manchester, and King's College Hospital; Lewis William Huelin, St. Mary's Hospital; Frank Percival Hughes, University College, Bristol, and Guy's Hospital; Philip Reginald Humphrey, St. George's Hospital; Robert Mackenzie Im Thurn, Cambridge University and St. Bartholomew's Hospital; Frederic Wood Jones, B.Sc. Lond., and John Jones, London Hospital; William Athol Desmond King, Middlesex Hospital; William Emmerson Lee, B.A. Camb., Percy Arnold Lloyd-Jones, B.A. Camb., and Henry Fairley Marris, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; John Speechly Le Fevre, Sydney University and London Hospital; Maurice George Louisson, Guy's Hospital; John George Macdonald, Otago University and University College Hospital; John William Manchester, M.D., C.M. McGill, McGill College, Montreal, and Middlesex Hospital; James Alexander Milne, London Hospital; Christopher William Paget Moffatt, M.A. Lond., B.A. Camb., Cambridge University and University College and Royal Infirmary, Liverpool; Idris Naunton Morgan, University College, Cardiff, and London Hospital; Reginald Moyle, Guy's Hospital; James Muirhead, M.B. Durh., Durham University; Charles Molteno Murray, M.A. Camb., Cambridge University and Guy's Hospital; John Henry Napper, King's College Hospital; Thomas Miller Neatby, M.A. Camb. & Lond., St. George's Hospital; Cecil Herbert Winter Page, M.A. Camb., Cambridge University and St. Bartholomew's Hospital; John Sidney Pearson, M.A. Camb., Cambridge University and St. George's Hospital; John Edwards Pellow, B.C. Camb., Cambridge University and St. Thomas's Hospital; William Oscar Pou, B.A., M.D. Michigan, Michigan University and London Hospital; Thomas Costello Power and John Jekyll Rainforth, London Hospital; Eugene Clifford Racker, Edinburgh University and St. Mary's Hospital; William Hartree Rayner, B.A. Camb., Cambridge University and University College Hospital; Jules Frederick Rey, L.D.S. Eng., Guy's Hospital; Bernard Beryl Riviere, St. Andrews University and St. Bartholomew's Hospital; Herbert Eldon Roaf, M.B. Toronto, Toronto University and University College and Royal Infirmary, Liverpool; Reginald Henry Robbins, Cambridge University and St. Mary's Hospital; Emmanuel Roberts, L.M.S. Ceylon, Ceylon Medical College and King's College Hospital; James Alexander Roberts, M.B. Toronto, Toronto University and University College Hospital; Ernest Sydney Routly, St. Mary's Hospital; Lancelot Walter Shadwell, St. George's Hospital; Arnold Shelley, B.A. Oxon., Oxford University and London Hospital; Samuel Smulian, London Hospital; Sidney John Steward, B.C. Camb., Cambridge University and St. Thomas's Hospital; Lionel Victor Thurston and Ernest Frank Travers, St. Bartholomew's Hospital; Gerald Augustus Ticehurst, Cambridge University and Guy's Hospital; Reginald Herman Tribe, University College Hospital; Arthur Hewett Turner, Guy's Hospital; Ernest Ritter von Ofenheim, M.D. Leipzig, University of Leipzig and St. Mary's Hospital; James Christopher Wadmore, University College, Bristol; Ernest Lewis Ward, University College, Cardiff, and Guy's Hospital; George Hope Warren, King's College Hospital; Frank Edward Wayte, Owens College and Royal Infirmary, Manchester; Vernon Northwood Whitamore, Charing Cross Hospital; Ralph Kuper White, St. Mary's Hospital; Willis Norton Whitney, M.D. Penn., Tokio and Pennsylvania Universities and London Hospital; Norman Methven Wilson and Frank Herbert Wood, St. Bartholomew's Hospital; Frederick Robert Elliston Wright, St. Thomas's Hospital; and Samuel Leggate Orford Young, Cambridge University and St. Bartholomew's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—R. H. Cooper (Section I.), Charing Cross Hospital; and W. G. Kinton (Section II.), Manchester.

Medicine.—J. Bromley (Sections I. and II.), Guy's Hospital; R. H. Cooper (Section I.), Charing Cross Hospital; W. G. Kinton (Section II.), Manchester; N. O. Roberts (Section II.), Cambridge and St. Mary's Hospital; and S. Zweiback (Section II.), Konigsberg.

Forensic Medicine.—M. B. Taylor, Guy's Hospital.

Midwifery.—G. W. Rogers, Cardiff and St. George's Hospital; and A. C. Story, St. Mary's Hospital.

The diploma of the Society was granted to the following candidate, entitling him to practise medicine, surgery, and midwifery:—W. G. Kinton.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidate having passed the necessary examination has been admitted a Fellow of the College:—

A. T. Mulhall, L.R.C.P. & S. Irel.

The following candidates have passed the primary part of the examination:—

T. A. Burke, S. C. Clarke, J. F. Devane, M. D. Healy, J. J. Hogan, J. Prendiville, and J. R. Tobin.

The following candidates having passed the necessary examination have been admitted Licentiates in Dental Surgery of the College:—

C. de Foubert and H. D. Griffith.

The following candidate has passed the primary part of the examination:—

W. Matthew.

UNIVERSITY OF OXFORD.—The Board of Faculty of Medicine has issued a regulation that the *viva-voce* examination in the examination in pathology for the B.M. degree shall no longer take place during the practical examination but shall be held as a separate part of the examination. By a statute just passed the University has instituted changes of importance in the final examination for the B.M., B.Ch. degrees. Hitherto, the examination in forensic medicine and public health has been conducted by the examiners in medicine, surgery, and midwifery, but in future there are to be two specially appointed examiners for these subjects and the examination will consist of a three hours' paper and a *viva-voce* examination. This examination has also been placed on the same footing as that in pathology, in that a candidate may take it at any time after he has passed the first B.M. examination. It has been enacted, further, that a time-table of the days and hours of examinations for the B.M. degree shall be prepared by the Board of Faculty of Medicine in each Easter term for the ensuing academic year and that each examination shall begin on the Thursday of the eighth week of full term (Michaelmas or Easter as the case may be). The medical examinations have also been subject to the same supervision as the other public examinations of the University in that the conduct of the examiners in regard to the examinations is now brought under the control of the Vice-Chancellor and proctors.—On the question of exemption from Greek, by very narrow majorities in a largely attended house, Congregation has recently passed resolutions to the following effect: "That members of the University should not be required to have satisfied the masters of the schools in Greek before presenting themselves as candidates in the honour schools of natural science and mathematics provided that they have satisfied the masters of the schools in the matter allowed as a substitute for Greek. That the matter allowed as a substitute

for Greek in Responsions should comprise (*a*) a mathematical subject, to be determined by the Board of Faculty of Natural Science subject to the approval of Convocation or a scientific subject to be determined by the Board of Faculty of Natural Science subject to the approval of Convocation; (*b*) a modern language—viz., either French or German, the examination in either language comprising translations and composition and candidates being required to reach a high standard of accuracy and proficiency." This step will now be followed up by the formulation of statutes along the lines of the resolutions carried in Congregation. But not until such statutes have been submitted and approved in Congregation and subsequently in Convocation also can the suggested changes come into effect. In view of certain statements which have been published these facts are of importance, for it is still a matter of considerable doubt whether such statutes can obtain majorities in Convocation even should they be carried in Congregation.

THE LEICESTER SANITARIUM.—A new hydropathic institution, the Leicester Sanitarium, was opened by the mayor and mayoress of Leicester in the beginning of February. The sanitarium stands on high ground at 80, Regent road, Leicester, within five minutes' walk of the Midland Railway Station and the Victoria Park. The building consists of a large double-fronted house of three storeys and basement. The bathrooms are well supplied with all modern conveniences and apparatus, including a Russian bathroom, an electric-light bath cabinet, a combination spray and douche apparatus, and massage rooms. Facilities are provided for baths of all descriptions, hot- and cold-water appliances, packs, compresses, electrical treatment, massage, manual Swedish movements, and physical culture. The superintendent is Dr. Alfred B. Olsen.

BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of the subscribers to the British Medical Benevolent Fund was held on Feb. 16th, Sir William Broadbent, Bart., the President, being in the chair. The report of the committee stated that during the year 1903 legacies amounting to £2860 had been received and invested in trust securities. The increased income so derived had been used to create new annuities and £2291 16*s.* 8*d.* had been paid to 117 annuitants. The grant department had been a constant source of anxiety throughout the year and in October had necessitated a special appeal in response to which £267 12*s.* were generously subscribed, enabling the committee to give assistance to several distressing cases the consideration of which had been unavoidably postponed. The grants during the year had amounted to £1658 distributed chiefly in small monthly instalments. Messrs. Deloitte, Dever, Griffiths, and Co. had again consented to act as honorary auditors and as such had attached their names to the balance-sheet after a searching examination of the accounts. Hearty votes of thanks were passed to the president, treasurer, and other officers of the fund and to the medical press for the kind support afforded.

LECTURES ON MEDICAL JURISPRUDENCE.—On Feb. 18th Dr. F. J. Waldo, coroner of the City of London, delivered the sixth and last of a series of lectures on medical jurisprudence at the Old Hall, Lincoln's Inn. The chair was occupied by His Honour Judge Sir Alfred Marten, K.C., and the audience included a number of barristers and law students. The subject was the highly interesting one of criminal poisoning cases. The first one discussed was the famous Rugeley poisoning case, in which Palmer, a surgeon, was convicted of the murder of a racing friend named Cook. The motive was clear in that case, as Palmer lived in daily fear of being made a bankrupt and of being indicted for forgery and embezzlement. It is likely that he poisoned not only Cook but his wife, his brother and three children, and a friend, all of whom died suddenly in his own house and under his personal medical care. The recent case of Klosowski was cited as a leading antimony poisoning case. Dr. Waldo, as coroner, was brought into close contact with that notorious crime. The poisoning of his nephew by Lamson, another surgeon, was described and the facts were emphasised both of the extreme potency of that particular alkaloid, aconitine, and the absence of any definite chemical test. Fortunately it was possible to detect the smallest quantity of the drug in the tissues after death by absolutely trustworthy tests of other kinds. The lecture, which was followed with the closest interest, wound up by a careful *résumé* of the chief points of the celebrated Maybrick poisoning case. The general conclusion was that the chain of evidence, moral, scientific, and circumstantial, was so closely linked as to leave no reasonable doubt as to the correctness of the verdict arrived at by the jury.

MEDICAL MAGISTRATE.—The Lord Chancellor has placed the name of Dr. George Fletcher of Highgate on the Commission of the Peace for the County of Middlesex.

DONATIONS AND BEQUESTS.—Under the will of Mr. James Hart St. George's Hospital will receive £100, as will also Charing-cross Hospital, the North-Eastern Hospital for Children, King's College Hospital, and University College Hospital.

UNIVERSITY OF CAMBRIDGE.—Mr. B. C. Ghosh, M.A. Cantab, L.S.A., has been "highly commended" for his essay on "The Doctrine of the Holy Trinity in Relation to Modern Thought" by the adjudicators of the Norrisian Divinity Prize at Cambridge.—The following have been appointed the examiners for the new diploma in tropical medicine and hygiene: Dr. G. H. F. Nuttall, Sir Patrick Manson, K.C.M.G., F.R.S., and Major Ronald Ross, C.B., F.R.S.

ANNUAL REPORTS OF BRADFORD HOSPITALS.—The annual court of governors of the Bradford Children's Hospital was held on Jan. 29th. The report stated that 414 in-patients were admitted in 1903 and that 52 deaths occurred during the same period. The average daily number in hospital was 50. In the out-patient department there were 15,277 attendances. In the autumn the board of management decided to divide the surgical from the medical cases and to increase the professional staff of the institution; steps were therefore taken to appoint two honorary assistant medical officers and an anæsthetist. The committee makes an earnest appeal for increased financial support.—The forty-seventh annual meeting of the subscribers of the Bradford Eye and Ear Hospital was held on Feb. 12th, the mayor of Bradford being in the chair. The report stated that the number of patients and operations during 1903 had been larger than in any previous year; 1065 in-patients were admitted; 1125 major operations were performed; and there were 21,785 attendances of out patients. The total number of patients was 6497, of whom 5309 sought advice for diseases of the eye and 1188 for diseases of the ear. The average daily number of in patients was 29 and the cost for board per head per day was 13 17 pence. The financial statement showed that the total receipts were £2694 and that the total expenditure was £2800.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Registration of Nurses.

Sir Frederick Dixon-Hartland has notified his intention of moving the rejection of the Bill which was mentioned in THE LANCET of Feb. 20th to regulate the qualification of trained nurses and to provide for their registration. It is understood that the Associated Hospitals Council is organising opposition.

The Revaccination Bill.

This Bill has been put down for second reading on Tuesday, April 26th. At present it occupies the first place in the orders for that date.

HOUSE OF LORDS.

TUESDAY, FEB. 23RD.

The Metric System.

Lord BELHAVEN AND STENTON moved the second reading of the Weights and Measures (Metric System) Bill, the object of which is to make compulsory in the United Kingdom the use of the metric system of weights and measures. Lord Belhaven, who spoke at great length, first gave a historical sketch of the agitation and then pointed to the disadvantages to home trade and foreign commerce arising from the use of the present system in this country and cited the testimony obtained from a large number of schoolmasters throughout the country that the adoption of the metric system would produce a saving of from one to three years' time in the education of children. He pointed to the complications arising from the use of avoirdupois weight, apothecaries' weight, and troy weight and from the present system of measurement of length. A further trouble arose from the use in different parts of the country of local weights and measures, often using the same terms which in different parts of the country or in different businesses had different values. Having given a number of concrete examples of this trouble, he said that he had that day presented to their Lordships' House a petition in favour of the Bill signed by 30 town councils, 40 chambers of commerce, trade unions

representing 289,000 workers, teachers' associations, retailers, and a large number of individuals. The total number of individuals represented by the signatures was 333,000, while the populations represented by the town councils aggregated 2,800,000. Fresh signatures were still coming in.

Lord COLCHESTER briefly opposed the principle of compulsion and pointed out that anyone who wished to use the metric system was at liberty to do so.

Lord KELVIN, who supported the Bill in a spirited speech, said that dilatory measures were an unmixed evil. Since 1895, when a Select Committee of the House of Commons had reported on the subject, we had had nine years of permission to use the metric system, but the country could not be induced to adopt it voluntarily. Compulsion was necessary. Of all the arguments against compulsion there was not one that weighed a scruple or a grain or a milligramme. In what countries had the compulsory adoption of the metric system been complained of? There had been no such thing as a complaint; no inconvenience had ever resulted. There was no difficulty in making the change. He had a statement from Sir William Ramsay, who was in Germany when the change was made there, showing that it gave no trouble whatever, and the new system was recognised within a week. While grateful to France for having given us the metric system it was interesting to know that the decimal system originated in this country. James Watt, in a letter dated Nov. 14th, 1783, laid down the whole principle of the metric system. He did so because in reading the results of the experiments of the French experimenters and mathematicians he found great difficulty in comparing his own experiments on the same subject. He demanded that there should be some system that would make one language in the world for such affairs. He then laid down plans which were in all respects the system adopted by the French philosophers seven years later when they suggested it to the King of England as a thing which might be adopted by international agreement. His lordship proceeded to point to dangers which might arise from mistakes made owing to dissimilar quantities having the same names in our various tables of weights. As an example he narrated a case in which he had to test a new rifle which was to be loaded with so many drachms of gunpowder. There were drachms in avoirdupois weight and drachms in apothecaries' weight, but they were of very different values. He thought, after weighing the charge, that the quantity was very large and he concluded that it was not safe to fire the rifle with that charge. Had he fired it probably he would not now be addressing their lordships. He subsequently urged that the Bill should not be sent to a Select Committee but should be passed and sent to the House of Commons without delay. In the Commons 333 Members had declared in favour of the measure. If the Bill became law what a tremendous gain it would be.

Lord WOLVERTON said that the Government would not oppose the Bill but a measure of such importance ought to be referred to a Select Committee. He pointed out various matters which would require careful consideration and inquiry and therefore a Select Committee was the proper course.

Earl SPENCER strongly supported the Bill but thought a Select Committee unnecessary as the whole subject had been investigated by the Committee of 1895.

The MARQUIS OF LANSDOWNE said that they were all agreed that the existing system, if system it could be called, was one to which overwhelming objections could be urged. The Bill, however, should be referred to a Select Committee as it required minute examination. Lord Kelvin's story had reminded him of an incident which had occurred to a friend of his who when travelling on the Continent became indisposed. He had with him a prescription written by his English medical adviser and he sent it to the local druggist in order to have some medicine made up. By return came a box of pills almost as large as marbles. He thought that it was not quite safe to swallow one of these and the next day the druggist came in post haste in a state of great excitement. He explained that he had just discovered that his assistant had made a mistake and had read "grains" on the prescription as "grammes." The gentleman was thankful that he had not sent a torpedo consisting of about 30 grains of calomel down into his inside.

The EARL OF ROSEBERY supported the plea for not referring the Bill to a Select Committee. There would be great difficulties and dislocation when the change was adopted, but these would not be avoided by any number of select committees. The people of this country were extremely conservative in these matters, but when it was recollected that nearly two centuries ago they faced the great difficulty of adopting a totally new calendar he did not think there would be the difficulty that noble Lords apprehended. If the Bill was passed it would be of infinitely more use to the commerce of this country than all the fiscal remedies proposed by the official and unofficial Members of the Government.

The EARL OF SELBORNE supported the reference of the Bill to a Select Committee.

The Bill was then read a second time and, on the motion of Lord WOLVERTON, it was referred to a Select Committee.

HOUSE OF COMMONS.

THURSDAY, FEB. 18TH.

Cigarette Smoking.

Dr. MACNAMARA asked the Home Secretary whether his attention had been called to the increase in cigarette smoking amongst boys and whether, in view of the effects of this practice, he would consider the desirability of taking steps to prohibit smoking by boys in Government employment, to invite the cooperation of employers of juvenile labour in putting down the practice, and to call the attention of all school authorities to the matter through the agency of the Board of Education.—Mr. AKERS-DOUGLAS replied: I have no special information nor have I power to take any action in regard to this subject. I am disposed to think that the public attention recently devoted to the subject is a very effective method of dealing with it. I may point out that there is a Commission on Physical Defects now sitting and I shall notify this question to it, and I think it might very effectively deal with it.

Sick and Wounded in War.

Dr. MACNAMARA asked whether a statement would be submitted to the House showing how far the general recommendation of the Royal Commission on the care and treatment of the sick and wounded during the South African campaign had been carried out.—Mr. BROMLEY-DAVENPORT answered: A detailed explanation of all action taken would involve the preparation of a very lengthy report. The following brief statement will, however, I think, sufficiently show what has been done taking the recommendations of the Commission seriatim. 1. The establishment of officers has been increased by 100. The Royal Army Medical Corps has been increased by 400 men. 2. The supply of surgeons and trained orderlies in the event of a great war is now receiving careful consideration. The equipment provided by the Mowatt reserves for three army corps, one cavalry division, and line of communication troops will, it is hoped, be quite complete by the middle of 1904. 3. The supply of candidates is now sufficient and the quality most satisfactory. A college has been established in London through which all captains must pass before promotion. Promotion to the higher ranks will be by selection and all must attain a high standard of qualification. Acceleration in promotion from captain to major can now be obtained by officers who show special merit at examination. Also special professional attainments will be recognised by appointment to special posts carrying extra pay. 4. The formation of Queen Alexandra's Imperial Military Nursing Service provides for a great increase in the establishment of women nurses. 5. Sanitary officers have already been, and are still being, appointed to important commands. 6. A new and improved pattern of ambulance wagon has been adopted. 7. Experiments are now in progress, having for their object the provision of a tent of improved pattern and more suitable for sick and wounded.

Appointment of Irish Dispensary Medical Officers.

Sir THOMAS ESMONDE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would consent to the repeal of Section 6 of the Local Government (Ireland) Act of 1902, with a view to the settlement of the difficulty which has arisen in Ireland regarding the appointment of dispensary medical officers.—Mr. WYNDHAM replied: The necessity for this section of the Act was explained by me in the committee stage of the measure on Dec. 12th, 1902. I cannot for the reasons then stated agree to the repeal of the section.

An Unfounded Story.

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that on Jan. 30th last a female patient in the infirmary of the North Dublin Union was reported dead; that the nurses in charge who were leaving the premises at the time gave instructions for the body to be removed to the mortuary and a medical officer's certificate to be made out which was done; and that subsequently, on the removal of another corpse from the mortuary, it was found that the woman was still living, and whether he would order an inquiry into the matter.—Mr. WYNDHAM stated in answer: My honourable friend has been misinformed. The question has no foundation in fact.

Pollution of the Thames.

Sir JOSEPH DIMSDALE asked the Secretary of State for War whether he was aware of the state of the sewage now being discharged into the river Thames from the military establishments at Sheerness and elsewhere, notwithstanding that the attention of the Secretary of State was in March, 1903, called to the subject by the corporation of London as the port sanitary authority; and whether he would state what steps he proposed to take to prevent the continuance of the discharge of sewage in its present state.—Mr. ARNOLD-FORSTER replied: My attention has been drawn to the matter alluded to in the question. As a similar state of affairs exists all along the lower river in the case of the civil population it is considered inexpedient that the War Department should take action separately from the local civil authorities affected.

Dentist for the Home Troops.

Sir CARNE RASCH asked the Secretary of State for War whether he had any official reports upon the appointment of two dental surgeons to the 1st Army Corps and whether he would state if it is proposed to increase their number.—Mr. ARNOLD-FORSTER, answering, said: Owing to the satisfactory nature of the reports on the employment of dental surgeons it has been decided to employ eight dentists with the troops serving at home stations.

FRIDAY, FEB. 19TH.

Finances of County Dublin Infirmary.

Mr. CLANCY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would state what was the contribution out of the county cess or the Poor-rate by the governors and governesses and from any other source towards the maintenance of the County Dublin Infirmary in the years 1897 and 1898, and what was the proportion of the contribution out of the county cess or Poor-rate towards the building of that institution.—Mr. WYNDHAM gave the following answer: The sources of income of the Meath Hospital and County Dublin Infirmary for the years ended March 31st, 1897, 1898, and 1901 are shown in the following table:—

—	1896-97.	1897-98.	1900-01.
	£	£	£
County presentment	1000	1000	1000
Contributions from governors and subscribers	1487	1995	1622
All other sources	3249	2831	2992
Total	5736	5826	5614

It is stated in the report of the Dublin Hospitals Commission, which was presented to Parliament in 1887, that the hospital as it was then reported upon was built at a cost of £12,876, partly contributed by private subscription and partly by grants from the grand jury. The latter

grants, I understand, amounted to £4788. No grants have since been made from county sources for building purposes. A further sum of £17,393 has been expended on new buildings since the date of the report, all of which was privately provided.

A Vaccination Case.

MR. CORRIE GRANT asked the Secretary of State for the Home Department whether he was aware that Mr. Pratt, of Balderton, applied three times to the Newark county petty sessions for an exemption certificate from vaccination for his child and was refused and that on the first two occasions his application was rejected because he had not a medical certificate that his child was unfit for vaccination; and whether in view of the misapprehension among many magistrates as to their duties in this matter he would propose amending legislation, substituting a statutory declaration of conscientious objection for the present application to the magistrates.—MR. AKERS-DOUGLAS replied: I have been made aware of this case by a letter from Mr. Pratt. The question of amending the Vaccination Acts does not fall within my department.

MONDAY, FEB. 22ND.

Mishap at Portsmouth Lunatic Asylum.

MR. REMNANT asked the President of the Local Government Board whether his attention had been directed to the recent deaths by poisoning of four inmates of the Portsmouth Lunatic Asylum and to the evidence given at the inquiry by the coroner disclosing want of care in the dispensing arrangements in that public institution; and whether, in view of the danger to life involved in leaving the important duty of compounding medicines to unqualified persons steps would be taken by the department to insure that every dispensary under the control of a local authority shall be in the charge of a person holding the qualification under the Pharmacy Acts.—MR. AKERS-DOUGLAS answered: The inquest in this case is not yet concluded, but my honourable friend may be assured that the point to which he draws attention will be carefully considered.

Overcrowding of Union Schools.

SIR ERNEST FLOWER asked the President of the Local Government Board whether he was aware that the certificate of the union schools of the West Ham guardians, which in November, 1901, was exceeded by 169 children and in November, 1902, and September, 1903, was still exceeded, is at present exceeded by over 200 children; that the boys are entirely without day-room accommodation; that 144 girls have day-room accommodation of 23 feet 6 inches by 18 feet 2 inches only; that 86 infants have a day room in which they also take their meals of 27 feet 2 inches by 18 feet 2 inches only; and whether, seeing that this overcrowding makes it impossible to isolate infectious diseases and that skin and eye complaints are present in the same dormitory, he would urge on the guardians the necessity of ascertaining if all those children at present dependent on the rates are entitled to such maintenance and of providing temporary accommodation by hiring houses in which small groups of children might be placed.—MR. LONG replied: I am aware of the overcrowding at these schools and have impressed upon the guardians the serious responsibility which attaches to them in this matter. The guardians inform me that they are endeavouring to make arrangements for boarding out some of the children beyond the union. I am still in communication with them and I have urged them to hire homes in or near the union or to provide temporary buildings in order to remedy at once the present state of things. I have also suggested that they should have a "call over" of the children with a view of ascertaining if the numbers cannot be reduced.

Experiments on Animals.

Dr. J. G. SHIPMAN asked the Home Secretary whether his attention had been called to the statement made by Mr. Bayliss, in his evidence in Bayliss *v.* Coleridge, that the inspector appointed under the Cruelty to Animals Act, 1876, visited University College on an average once a week during the period Mr. Bayliss was conducting his researches and lectures there; whether he would state the exact number of visits paid by the inspector to University College during the year 1902; whether the inspector was officially connected with University College; and how many times the inspector visited each of the other places registered for vivisection in 1902.—MR. AKERS-DOUGLAS replied as follows: 12 visits to University College in 1902 were reported by the inspector, but I understand that owing to his constant attendance at the College he was able to pay many visits to the laboratory, and these, when he found nothing special to report, were not included in his return. The inspector is professor of anatomy in University College, London. During 1902 the inspector and the assistant inspector paid 106 visits to the other registered places in England and Scotland, making an average of just under two visits to each place.

Dr. SHIPMAN asked the Home Secretary whether, in view of the fact that the inspector appointed under the Cruelty to Animals Act, 1876, only witnessed the whole of one and part of 11 experiments out of the total of 14,976 performed in 1902, he would consider the advisability of increasing the number of inspectors.—MR. AKERS-DOUGLAS said: It has to be remembered that, of the 14,906 experiments mentioned in the question, 12,776 were of the character of inoculations or feeding experiments. Further, apart from the actual experiments witnessed, large numbers of the animals have been seen by the inspectors and their condition after the initial experiment has been examined. I am satisfied that the inspection is sufficient to keep me fully informed as to the practical working of the Act and the observance of its provisions, but if at any time I come to the conclusion that more inspection is desirable I shall not hesitate to endeavour to obtain the necessary increase of staff.

No Legal Standard for Whisky.

MR. KILBRIDE asked the Chancellor of the Exchequer whether he would appoint a committee of analytical experts to fix a legal standard in the case of whisky, such as is done in other articles of consumption, in order to protect the public against spurious substitutions.—THE CHANCELLOR OF THE EXCHEQUER replied: The Board of Inland Revenue does not think that it would be of any practical use to attempt to fix a legal standard for whisky. There is already a legal standard of strength below which whisky may not be sold without notice and other conditions must necessarily vary according to the taste of the consumer.

BOOKS, ETC., RECEIVED.

ALBRIGHI, SEGATI E C., Rome and Milan.

Manuale dell' Igienista ad Uso di Ufficiali Sanitari, &c. Per Cura del Prof. Angelo Celli, Direttore dell' Istituto d'Igiene della R. Università di Roma. Con la collaborazione di O. Casagrandi, A. Scala, I. Nosotti, D. Spatàro, T. Gualdi, C. Fradella. Seconda Edizione interamente rifatta del Manuale dell' Ufficiale Sanitario. 2 Vols. Prezzo del 2 volumi L. 30.

COLTON PUBLISHING CO., Washington, D.C.

The Aristocracy of Health. A Study of Physical Culture, Our Favorite Poisons, and a National and International League for the Advancement of Physical Culture. By Mary Foote Henderson Price not stated.

COX, HORACE, "The Field" Office, Bream's Buildings, E.C.

Pheasants: Their Natural History and Practical Management. By W. B. Tegetmeier, Member of the British Ornithologists' Union. Fourth edition, enlarged. Illustrated from life by J. G. Millais, T. W. Wood, P. Smit, and F. W. Frohawk. With Coloured Plates of the Various Species. Price 7*s.* 6*d.* net.

F. A. DAVIS COMPANY, 1914-16, Cherry-street, Philadelphia, Pa., U.S.A.

Infant Feeding in its Relation to Health and Disease. By Louis Fischer, M.D., Visiting Physician to the Willard Parker and Riverside Hospitals of New York City. Third edition. Price $1.50 net.

FISCHER, GUSTAV, Jena.

Semiologie und Differentialdiagnostik der verschiedenen Arten von Kurzatmigkeit auf Grund der Atemkurve. Von Dr. Ludwig Hofbauer, z.Z. Assistent der III. Medizinischen Abteilung im Wiener allgemeinen Krankenhause. Price M.8.

GALE AND POLDEN, LIMITED, 2, Amen-corner, Paternoster-row, E.C., and Wellington Works, Aldershot.

Compounding and Dispensing Made Easy. An Aid for the Promotion Examinations in the Subjects. For Non-Coms. and Men of the Royal Army Medical Corps. By H. Harold Scott, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., Lieutenant, Royal Army Medical Corps. Price 7*s.* 6*d.* net. Post free to any part of the world.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Gesammelte Arbeiten zur Immunitätsforschung. Herausgegeben von Professor Dr. P. Ehrlich, Geheimer Medicinal-Rath. Price M.17.

Hydrotherapie. Ihre Physiologische Begründung und Praktische Anwendung. Von Dr. Simon Baruch, Professor der Hydrotherapie in New York. Autorisirte deutsche Ausgabe von San.-Rath Dr. W. Lewin, Arzt in Berlin. Price M.12.

HÖLDER, ALFRED, 1, Rotenturmstrasze, 13, Vienna.

Handbuch der Urologie. Herausgegeben von Dr. Anton v. Frisch, A.O. Professor der Chirurgie an der Wiener Universität, und Dr. Otto Zuckerkandl, Privatdozent für Chirurgie an der Wiener Universität. Unter Mitwirkung von Prof. Dr. E. Burckhardt, Hofrat Prof. Dr. S. Exner, Prof. Dr. E. Finger, Prof. Dr. A. v. Frisch, Prof. Dr. L. v. Frankl-Hochwart, Privatdozent Dr. H. Koeppe, Privatdozent Dr. R. Kraus, Prof. Dr. J. Mannaberg, Prof. Dr. J. Mauthner, Privatdozent Dr. P. Wagner, Prof. Dr. A. v. Winiwarter, Prof. Dr. M. v. Zeissl, Hofrat Prof. Dr. E. Zuckerkandl, Privatdozent Dr. O. Zuckerkandl. Erster Band. Price not stated.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

The Physiological Feeding of Infants. A Practical Handbook of Infant Feeding and Key to the "Physiological Nursery Chart." By Eric Pritchard, M.A., M.D. Oxon., M.R.C.P. Lond. Second edition. Greatly enlarged and entirely rewritten. Price 3*s.* 6*d.* net.

LEHMANN, J. F., München.

Atlas und Grundriss der Bakteriologie und Lehrbuch der Speziellen Bakteriologischen Diagnostik. Teil I.: Atlas. Teil II.: Text. Von Prof. Dr. K. B. Lehmann, Vorstand des Hygienischen Instituts in Würzburg, und Dr. Phil. & Med. R. O. Neumann, Abteilungsvorstand am Städt. Hygieneinstitut, Hamburg. 3. Vermehrte und Verbesserte Auflage. Preis, gebunden, M.16. (Lehmann's Medizinische Handatlanten, Bd. X.)

LEWIS, H. K., 136, Gower-street, W.C.

The General Pathology of Inflammation, Infection, and Fever, being the Gordon Lectures for 19 2. By E. W. Ainley Walker, M.A., D.M. Oxon., Fellow and Prælector of University College, Oxford, late Gordon Lecturer in Experimental Pathology at Guy's Hospital. Price 4*s.* 6*d.* net.

LIVINGSTONE, E. AND S., 15, Teviot-place, Edinburgh.

Husband's Forensic Medicine, Toxicology, and Public Health. Seventh edition, revised and enlarged. By R. J. M. Buchanan, M.D., B.Ch. Viet., M.R.C.P. Lond., M.R.C.S. Eng., Assistant Lecturer on Forensic Medicine and Toxicology in the University of Liverpool, and E. W. Hope, M.D., D.Sc. Professor of Public Health, University of Liverpool. Price 10*s.* 6*d.* net.

MALOINE, A., 25-27, Rue de l'École de Médecine, Paris.

L'Entéro-Colite Muco-membraneuse. Par le Dr. Froussard, Ancien Interne des Hôpitaux de Paris, Médecin Consultant à Plombières les Bains. Price Fr.2.

MURRAY, JOHN, Albemarle-street, W.

Recent Excavations in the Roman Forum, 1898-1904. A Handbook By E. Burton-Brown. With Preface by Comm. Boni, Director of the Excavations. Price 5*s.* 6*d.* net.

NAUD, C., 3, Rue Racine, Paris.

Le Sens des Attitudes. Par Pierre Bonnier. Price Fr. 3.50.

REBMAN, LIMITED, 129, Shaftesbury-avenue, Cambridge-circus, W.C.

An Atlas of Human Anatomy for Students and Physicians. By Carl Toldt, M.D., Professor of Anatomy in the University of Vienna. Assisted by Professor Alois Dalla Rosa, M.D. Translated from the Third German Edition and adapted to English and American and International Terminology by M. Eden Paul, M.D. Brux., M.R.C.S., L.R.C.P. Third section. D.—Myology. Price 8s. 6d. net.

Practical Gynecology. By E. E. Montgomery, M.D., LL.D., Professor of Gynecology, Jefferson Medical College. Second revised edition. Price 25s. net.

Text-book of Histology, including the Microscopic Technic. By Dr. Philipp Stöhr, Professor of Anatomy at the University of Würzburg. Translated from the Tenth German Edition by Dr. Emma L. Bilstein. Edited, with additions, by Dr. Alfred Schaper, Professor of Anatomy, University of Breslau. Price 14s. net.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London and of Holders of the Diploma in Public Health granted Conjointly by the Royal Colleges of Physicians and Surgeons. MCMIV.

STUBER, A. (C. KABITZSCH), Würzburg.

Beiträge zur Klinik der Tuberkulose. Herausgegeben von Dr. Ludolph Brauer, a.o. Professor an der Universität Heidelberg. Band II. Heft 2. Einzelpreis M.4. Subskriptions-Preis pro Band M.16. (3-5 Hefte bilden einen Band.)

THACKER, W., AND CO., 2, Creed-lane, E.C.

Food for the Tropics. Being a Short Description of Native Produce Suitable for Food in Tropical Countries. By T. M. Macknight. Price 3s. 6d. net.

WRIGHT, JOHN, AND CO., Bristol (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London).

Dispensing Made Easy: With numerous Formulæ and Practical Hints to secure Simplicity, Rapidity, and Economy. By Wm. G. Sutherland, M.B. Aberd., formerly House Surgeon, Queen's Jubilee Hospital, Earl's Court, S.W. Price 3s. 6d. net.

A Guide to Urine Testing. For Nurses and Others. By Mark Robinson, L.R.C.P., L.R.C.S. Edin. Second edition. Price 1s. net.

Memoranda on Infectious Diseases. For the Use of School Teachers. By James W. Allan, M.B., Physician, Glasgow Royal Infirmary, late Physician Superintendent, Belvidere Fever Hospital. Price 6d. each, or 4s per dozen.

Ailments of Women and Girls. By Florence Stacpoole. Certificated London Obstetrical Society; Lecturer for the National Health Society and for the Councils of Technical Education. Price, stiff boards, 2s. net; cloth, 3s.

The Infectivity of Enteric Fever; with Observations on its Origin and Incidence at Caius College, Cambridge, Festiniog and Wicken-Bonant. By Alexander Collie, M.D. Aberd., late Clinical Instructor at the Eastern Hospitals. Price 1s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BROWN, D. DORWARD, M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Deputy Medical Officer of Health of the Borough of Sunderland.

BULLMORE, CHARLES CECIL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Falmouth Workhouse and to the Falmouth District by the Falmouth Board of Guardians.

COGSWELL, P. D., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of the Stanton District in the Hinckley Union.

CROSSMAN, EDWARD, M.D. Durh., L.R.C.P. Lond., M.R.C.S., L.S.A., has been reappointed Medical Officer of Health for the Barton Regis Rural District Council.

GABB, H. S., M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory Act for the Hastings District of the county of Sussex.

GODWIN, HERBERT JAMES, M.B., B.S. Durh., F.R.C.S. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgeon in Ordinary to the Royal Hants County Hospital, Winchester.

HARTIGAN, T. J. P., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars.

MAY, F. H., M.R.C.S., L.R.C.P. Lond., L.S.A., has been reappointed Medical Officer of Health by the Aston Manor Corporation.

RAINBIRD, P. H., L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S.G., has been appointed Certifying Surgeon under the Factory Act for the Saxilby District of the county of Lincoln.

SMITH, M. HAMBLIN, M.R.C.S., L.R.C.P., Deputy Medical Officer H.M. Prison, Manchester, has been transferred to H.M. Prison, Wandsworth.

STEWART, ROBERT SLOSS, M.D., C.M. Glasg., D.P.H. Camb., the Deputy Medical Superintendent to the Glamorganshire County Asylum, Bridgend, has been appointed Superintendent.

WAUGH, P. M., M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Rye District of the county of Sussex.

WEAVER, J. J., M.R.C.S., L.S.A., has been appointed Medical Officer of Health of Southport.

WINTLE, COLSTON, L.R.C.P. Lond., M.R.C.S., has been appointed Chairman of the Bristol Health Committee of the City Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £110 per annum, with board.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician. Also Assistant Surgeon.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House Surgeon. Salary £75, with board and attendance.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS, Isleworth.—Medical Superintendent and Medical Officer. Salary £300 per annum, with residence, rations, washing, &c., and fees.

BURTON-UPON-TRENT, COUNTY BOROUGH OF.—Medical Officer of Health and Public Analyst. Salary £400 per annum.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, lodging, and washing.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Resident Junior House Surgeon, for six months. Salary £50 per year, with board, apartments, and laundress.

CUMBERLAND INFIRMARY, Carlisle.—Resident Medical Officer. Salary at rate of £80, with board, lodging, and washing.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Honorarium of £25, with board, residence, &c. Also Medical Officer for the Casualty Department for six months, renewable. Salary at rate of £100 per annum.

GORDON HOSPITAL FOR FISTULA, &c., Vauxhall Bridge-road, S.W.—Honorary Anæsthetists.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

LANCASTER, COUNTY LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £150, with board, lodging, washing, &c.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Assistant Physician.

LEITH HOSPITAL.—House Physician, Assistant House Physician, House Surgeon, Assistant House Surgeon, and Surgeon for Out-patient Department. All for six months.

LONDON FEVER HOSPITAL, Islington, N.—Assistant Resident Medical Officer. Salary £120 a year, with board and lodging.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months. Salary at rate of £60 a year, with board and lodging.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with board and residence.

NATIONAL DENTAL HOSPITAL AND COLLEGE.—Anæsthetist.

READING, ROYAL BERKSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL.—Clinical Assistants.

ROYAL PIMLICO DISPENSARY, 104, Buckingham Palace-road, S.W.—Attending Medical Officer.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Casualty House Surgeon for six months. Salary £100 per annum, with board and lodging.

SALOP INFIRMARY.—House Physician, for six months. Salary at rate of £50 per annum, with board and apartments.

WESTMINSTER HOSPITAL, opposite Westminster Abbey.—Medical Officer in charge of Electrical Department. Salary £120 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith road, W.—House Physician and House Surgeon for six months. Board and lodging provided.

WEST RIDING OF YORKSHIRE.—Bacteriologist and Assistant to County Medical Officer. Salary £250 per annum, rising to £400.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory Act at Haverhill in the county of Suffolk on March 16th.

Births, Marriages, and Deaths.

BIRTHS.

CARTER.—On Feb. 23rd, at Chapel-Allerton, Leeds, the wife of Eustace G. Carter, M.R.C.S., of a daughter.

DUNKIN.—On Feb. 17th, at Studley-road, Clapham, S.W., the wife of Silas Ethelbert Dunkin, M.R.C.S. Eng., L.R.C.P. Lond., &c., of a daughter.

DUNLOP.—On Feb. 9th, at Somerset-place, Glasgow, the wife of the late Alex. W. Dunlop, M.D., Levenwich, Shetland, of a daughter.

DEATH.

MORISON.—On Feb. 24th, at Edinburgh, Louie, wife of Rutherford Morison, Newcastle-on-Tyne.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE ACTION OF SELENIUM, TELLURIUM, AND ARSENIC ON MUSCULAR TISSUE.

THE February number of the *Medical Chronicle* contains a short account of some physiological experiments with selenium, tellurium, and arsenic made by Dr. H. J. Crompton, resident medical officer in the Royal Infirmary, Manchester. He commences with a reference to the increased attention recently given to selenium owing to the suggestion made by Dr. F. W. Tunnicliffe and Mr. Otto Rosenheim that this substance was associated with arsenic in the cases of beer poisoning which occurred in the North of England in 1900 (THE LANCET, Feb. 2nd, p. 318, Feb. 9th, p. 434, and March 30th, p. 927, 1901). In view of this statement Dr. Crompton investigated the action of selenium compounds on the nervo-muscular tissues of the frog by experiments (1) on voluntary muscle and motor nerve trunks, (2) on the involuntary muscles contained in the walls of the blood-vessels, and (3) on the cardiac muscle. At a later date he made similar experiments with compounds of tellurium and arsenic. For the experiments on voluntary muscle the gastrocnemius of a frog was removed from the animal, supported at its ends on brass wires, and immersed in a 0·75 per cent. solution of sodium chloride ("normal saline"), containing also a known proportion of selenate, selenite, tellurate, arsenate, or arsenite of sodium. Electrical currents were passed at intervals and the shortening of the muscle thereby produced was recorded on a revolving drum. Experiments on the heart muscle were made by means of the tonometer described by Roy, in which an isolated frog's heart tied to a cannula through which the solution under investigation can be perfused is placed in a small air-tight vessel filled with olive oil; variations in the volume of the ventricle are indicated by the rising and falling of a piston. The general results of the experiments were to the effect that although the above-mentioned salts are destructive to animal life, solutions of them nevertheless have no directly poisonous effect on either the voluntary muscle, the motor nerve trunks, or the cardiac muscle of the frog.

QUACKERY AND CREDULITY.

THE following advertisement appeared in the *Birmingham Daily Mail* of Feb. 13th:—

ADVERTISER would sell Cancer, Tumour, and Polypus Cure, price One Thousand Guineas, or would Cure. Personal Testimonials.—M. Vernon, 49, Church Vale (Square), Handsworth. At Home, Mondays, 12 till 4.

We cannot congratulate our contemporary upon the insertion of such an advertisement as the above. We have no doubt that M. Vernon will sell, but what he sells will not be a cancer cure but his dupes, of whom there will probably be not a few.

PAYMENT OF MEDICAL WITNESSES.

To the Editors of THE LANCET.

SIRS,—To those who lightly set out to tender evidence in a magistrate's court may I indite a warning. The fee that you will get for a twelve-mile drive and a ruined morning's work is not that which many would have you believe—namely, one guinea and mileage—but depends entirely upon your power of awakening the sympathy of the bench for your sufferings. They have the power to award you anything from a modest 1d. up to the stately two guineas. How best to avoid the half-guinea appearance and to assume the guinea department I fain would learn. Anyway, a kind word to a magistrate whenever you meet one may, when the subpœna cloud hangs over you, meet with its reward even in this life. I am, Sirs, yours faithfully,

Castle Cary, Somerset, Feb. 20th, 1904. DAVID PRICE, M.B. Lond.

AN OBSERVATION ON THE VALUE OF GARLIC AS A REMEDY.

To the Editors of THE LANCET.

SIRS,—I have read with interest the article by Dr. Giulio Cavazzani and the letter from Dr. W. C. Minchin upon the use of garlic in tuberculosis and I should like to record that it is not only in this disease that it is of service. I have used it with success in bronchial conditions, notably in bronchitis of the finer tubes where the patient complains that his chest "feels stuffed up" and where on auscultation there is heard a large number of sibilant râles. Also in cases where there is much purulent expectoration. In these cases, after the exhibition of the drug, there has been much relief. The active principle, sulphide of allyl, is undoubtedly excreted into the respiratory passages and may very possibly act as an antiseptic. I note that Dr. W. Ewart in Allbutt's "System of Medicine," quoting Dr. G. V. Poore's work on Nervous Affections of the Hand and Other Studies, recommends it in the treatment of bronchiectasis. I have given 15-grain doses of the bulb chopped up and administered in cachets three or four times a day.

I am, Sirs, yours faithfully,

Retford, Feb. 19th, 1904. HANWAY R. BEALE, M.D. Lond.

THE MICROSCOPE IN INDIAN PRACTICE.

ARTICLES and letters under the above heading have been appearing in recent numbers of our contemporary, the *Pioneer*. The writer of one letter, a medical man, though it is not apparent whether he is a civilian practitioner or a member of the Indian Medical Service, brings a rather strong indictment against some of his professional brethren whom he accuses of being too lazy or incapable to examine the blood of every patient suffering from "fever," even when they have a microscope. The supply of microscopes is doubtless rather limited, but possibly the varieties of climate to be met with in India may be responsible in some measure for this. A one-twelfth inch objective would be difficult to keep in order during the monsoon on the Kanara coast and we fancy that most of the Indian medical men who have the capacity and training to use a microscope for the diagnosis of the malarial parasite do so, the microscope being supplied by themselves.

F R C S. (Eng) has asked us questions to which it is very difficult to give definite answers in the absence of complete local knowledge. We will communicate with him.

Clack will find an extended memoir of Sir Andrew Clark in THE LANCET of Nov. 11th, 1893, p. 1222. The late physician was well known to us.

Interested has omitted to send his name.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, Feb. 25th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 19	30·02	N.N.W.	...	62	51	34	33	35	Hazy
,, 20	29·77	S.W.	0·12	62	54	35	49	51	Overcast
,, 21	29·89	W.	0·05	67	54	48	46	47	Raining
,, 22	29·81	N.W.	...	88	51	46	42	47	Cloudy
,, 23	30·16	S.E.	...	65	43	37	36	38	Overcast
,, 24	30·17	S.E.	...	74	43	37	36	38	Foggy
,, 25	30·23	S.E.	...	42	38	36	35	37	Snowing

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9 30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1 30 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9 30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.0 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (29th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M. Mr. C. B Lockwood: Aseptic Surgery in Theory and Practice. Lecture III.—Environment and Results. (Lettsomian Lecture.)

WEDNESDAY (2nd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens: Mr. A. Doran: Pregnant Fibroid Uteri removed by Operation. Dr. Addinsell and Mr. Walker (introduced by Dr. Addinsell): Demonstration of Microscopical and Lantern Slides showing Mitotic Changes in Cancer Cells. Papers:—Mr. H. Cripps and Dr. H. Williamson: Two Cases involving the Question of the Site of Impregnation.—Mrs. Boyd: Two Cases of Abdominal Hysterectomy for Fibroids complicated by Pregnancy, with Specimens.

THURSDAY (3rd).—RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.30 P.M. Presidential Address:—Some Laboratory Notes of the last Six Months.

CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Lecture:—Prof. W. A. Potts: The Protection of Feeble-minded Children during and after School Age.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5.30 P.M. Discussion on Obesity (opened by Dr. L. Williams).

FRIDAY (4th).—SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. D. Buxton. Communications by the President (Mr. C. C. Braine) and Dr. Flux. Annual General Meeting.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases, Specimens, &c., will be shown by Dr. McBride, Dr. F. Potter, Dr. Smurthwaite, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (29th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. B. Rawling: Fractures of the Skull, including Mechanism, Pathology, Complications immediate and remote, and Treatment. (Hunterian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. E. G. Little: Clinique. (Skin.) 5.15 P.M. Dr. H. Tilley: The Diagnosis and Treatment of the Common Forms of Nasal Obstruction.

UNIVERSITY OF LONDON.—5 P.M. Lecture:—Dr. A. E. Wright: Physiology of Immunisation.—On Anti-tubercle Inoculation.

TUESDAY (1st).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. W. Williams: Deaths in Childbed, a Preventable Mortality. (Milroy Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: High Frequency Currents (illustrated by lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. Thompson: Clinique. (Medical.) 5.15 P.M. Dr. D. Grant: Some Common Errors in the Diagnosis and Treatment of Diseases of the Throat.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Tooth: Cranial Nerves.

WEDNESDAY (2nd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. B. Rawling: Fractures of the Skull, including Mechanism, Pathology, Complications immediate and remote, and Treatment. (Hunterian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Bedford: Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. H. Tubby: Clinique. (Surgical.) 5.15 P.M. Dr. F. J. Smith: Cough and its Significance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. P. Kidd: Types of Pulmonary Tuberculosis.

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—4 P.M. Lecture:—Diseases of the Stomach. (Post-Graduate Course.)

THURSDAY (3rd).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. W. Williams: Deaths in Childbed, a Preventable Mortality. (Milroy Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. S. Edwards: Gleet and its Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. F. J. Smith: Cough and its Significance.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN (Marylebone-road, N.W.).—3 P.M. Dr. F. J. McCann: The Treatment of "Irritable Bladder" in Women.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Bosanquet: Demonstration of Medical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. F. Price: Mitral Stenosis (illustrated by cases). (Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). 5.15 P.M. Dr. M. Dockrell: Sycosis. (Chesterfield Lecture.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Collier: The Surgical Anatomy of the Ear in Children.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Prof. H. L. Callendar: Electrical Methods of Measuring Temperature.

FRIDAY (4th). ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. B. Rawling: Fractures of the Skull, including Mechanism, Pathology, Complications immediate and remote, and Treatment. (Hunterian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Rickets and its Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. Clarke: Clinique. (Eye).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Tooth: Cranial Nerves.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1903, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1904.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1903 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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During the week marked copies of the following newspapers have been received *Western News (Galway), Westmeath Independent, Southampton Times, Aberdeen Free Press, Aberdeen Free Press (Weekly), Westminster Gazette, Windsor and Eton Express, South Wales Daily News, Walsall Advertiser, Surrey Advertiser, Reading Mercury, Mining Journal, Local Government Chronicle, Yorkshire Herald, Daily News, Daily Chronicle, Standard, Liverpool Post, Westminster Hospital Gazette, &c.*

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. J. Astier, Asnières; Dr. Francis J. Allan, Lond.; Dr. Donald Armour, Lond.

B.—Mr. J. W. Benson, Lond.; Mr. F. E. Bissell, Kingstone; Mr. T. Bell, Lancaster; Mr. E. Baker, Birmingham; Messrs. Brady and Martin, Newcastle-on-Tyne; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. F. C. Bury, Riverhead; Buntingford House, Buntingford, Medical Superintendent of; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. E. H. Blake, Lond.; Mr. A. H. Bostock, Chichester; Mr. Bradburne, Ryde; Dr. Geoffrey Bate, Brighton; Dr. H. C. Bastian, Lond.; Mr. C. L. Bedford, Lond.; Dr. D. H. Beegling, Huddersfield; Mr. A. Bird, Sidmouth; Dr. Byrom Bramwell, Edinburgh; British Medical Benevolent Fund, Hon. Secretary of; Dr. D. Bower, Bedford.

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U.—University College, Sheffield, Registrar of.

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Letters, each with enclosure, are also acknowledged from—

A.—Aymard Patent Milk Steriliser Co., Ipswich.

B.—Dr. J. F. Boa, Kildonan; Mr. S. H. Byam, Lond.; Birkenhead Union, Clerk of; Mr. T. Bell, Lancaster; "Brown," Lond.; Mr. G. W. Brown, Hanley.

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